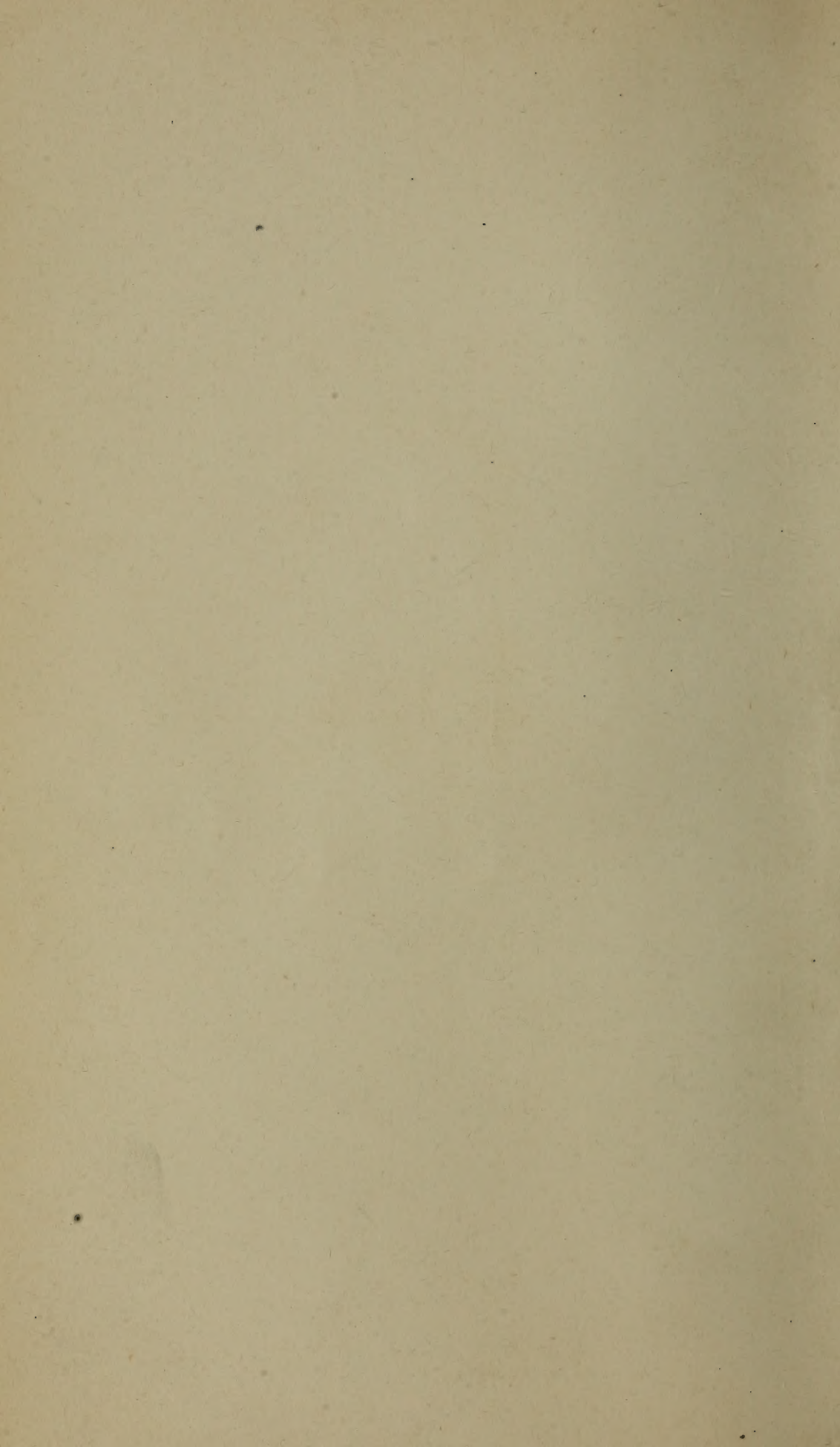


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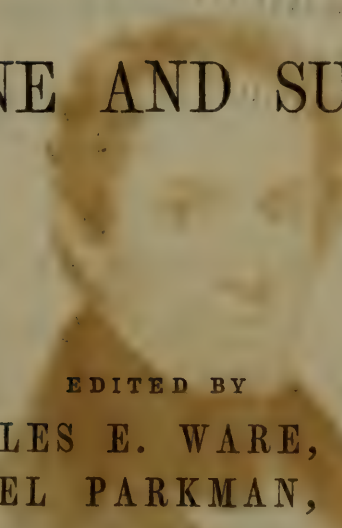
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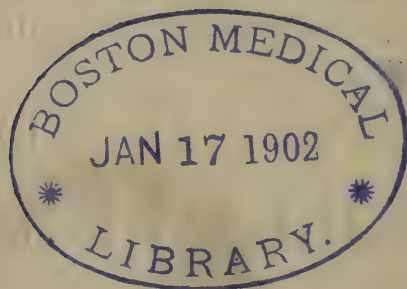
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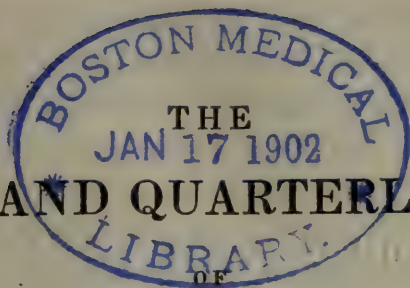
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NEW ENGLAND QUARTERLY JOURNAL

MEDICINE AND SURGERY,

FOR JULY, 1842.

Original Communications.

ART. I.—*Tic Douloureux, imitated by Diseases of the Teeth*; a paper read before the Boston Society for Medical Improvement, by THOMAS GRAY, JR., M.D.

IN speaking of this painful disease, I wish to be understood as referring only to that form of it which attacks the nerves of the face; the *neuralgia faciei* of Dr. Good. In order that I may at once occupy the whole ground of my subject, I will observe, that I believe a large number of the cases of supposed tic douloureux arise from diseases of the teeth, of some kind or other. The diagnosis is more difficult than many physicians are prepared to admit; and I have myself been in the way of knowing many cases, which had been treated with all the ordinary and extraordinary remedies for a considerable length of time, yield at once to a very simple operation upon these organs. I propose, in the following paper, to enumerate such of the diseases of the teeth as I have known to give rise to cases of supposed tic douloureux.

Dr. Good's definition is, "lancinating pains shooting from the region of the mouth to the orbit, often to the ear, and over the cheek, palate, teeth and fauces, with convulsive twitchings of the adjoining muscles." This definition involves and describes nothing more than may and does constantly occur from irritation or inflammation of some portion of a diseased tooth. Neither is Dr. G. more happy in

the diagnostic symptoms, that he enumerates. "The disease," he observes, "has been occasionally mistaken for rheumatism, hemicrania and toothache; yet the brevity of the paroxysm, the lancinating pungency of the pang, the absence of all intumescence or inflammation, the comparative shallowness instead of depth of its seat, and its invariable divarication in the course of the facial nerves or their offsets, will always be sufficient to distinguish it from every other kind of pain." Now this distinction, at least so far as "toothache" is concerned, is certainly erroneous; unless he is willing to consider the similar pain arising from disease of a tooth, and which is removable by removing or otherwise operating upon the tooth, to be a veritable tic douloureux. This disease, then, is usually considered to be an affection of the second and third branches of the fifth pair of nerves, or the portio dura of the seventh, or both. These nerves, supplying the superior and inferior maxillary branches, are of course identical with those concerned in "*toothache*;" and the same pain, traversing the same nerves, *must* render it impossible for the patient to distinguish the cause, merely by his own sensations.

1. The first and most frequent cause of toothache operates when, from decay, the nerve of a tooth is denuded and exposed to the action of the saliva, contact with foreign bodies, sudden change of temperature, as from cold water, the external air, &c. These cases are too obvious to be mistaken or confounded. But this disease occasionally manifests itself in another and obscurer form. This is, when a pressure, too gentle to excite any pain at first, is made over a nerve, a very thin lamina of bone alone intervening between the nerve and the filling, for instance, of a tooth. This pressure is borne for a time without any inconvenience; but its steady and sustained character finally produces irritation; which if not soon relieved, develops all the symptoms of tic douloureux. In these cases, the history of the case will usually give the clue to the cause of it; but not always, for the pain sometimes does not occur till several days after a tooth has been filled, and is then felt in a very different place from its real one perhaps most frequently in the antagonist tooth of the other jaw. Not unfrequently it will occur in a tooth that has been filled for years, and which seems beyond suspicion.

But there is still another and an obscurer form of this disease. A tooth, for instance, decays in the centre, leaving externally upon the crown only a single dark speck, not larger than would be made by dipping the point of a pin in ink, and impressing it there. The bone

of the tooth being much softer than the hard enamel which encases it, decomposes rapidly beneath it; till the decomposed matter, either pressing mechanically upon the nerve, or perhaps acting chemically by means of some acrid property, produces the symptoms of tic douloureux. In these cases, the patient is frequently unable to fix upon any particular tooth as the culprit. Sometimes he will think it one tooth, at other times another. To an unpractised eye, the tooth appears perfectly sound; and even the most practised may easily overlook it, if the tooth be not very carefully wiped, and a strong light thrown upon it by means of a mirror or reflector. The remedy consists, in this case, in opening the cavity and filling the tooth; which may be done by destroying the nerve, or, what I have not unfrequently found better, by flooring the cavity with cotton wet with creosote, and filling upon that; making the principal pressure in a lateral direction. By this course the evil is remedied without sacrificing the tooth; and if the operator have failed to reach the true cause of the simulated tic douloureux, he at least will not have added the pain of extraction and the useless sacrifice of the tooth (a thing too frequently done) to the excruciating pain of the disease.

The error that usually attends these cases is as follows. 'The faulty tooth appears, unless to a practised eye, perfectly sound; and some other tooth is sought for, whose appearance is not quite so prepossessing, though in fact, perhaps, much better. This is extracted, and of course without relief. Another is then sought for with a like result, and after the mouth of the unlucky patient is picked pretty clean, he comes to the conclusion that his must be a case of true tic douloureux; and he is then henceforth abandoned to a long course of useless treatment, wearisome alike to both patient and physician.

2. A second cause of mistaking toothache for tic douloureux, I have found to arise from what is believed to be the filtration of some fluid into the empty canal of the nerve or nerves, after they have perished. Thus a tooth in that state will frequently decay gradually, without any pain or inconvenience to the patient until the tooth is filled. Then, these fluids, finding no outlet above, react below, producing uneasiness and pain along the course of the nerves, while there is frequently no sensation about the tooth itself to attract attention particularly to it. The patient knows generally that the nerves of the tooth are gone, and tic douloureux is at once set down as the cause. A greater or less degree of lameness about the tooth on biting, however, conjoined with the history of the case, will usually lead to the

true cause. The remedy consists in either filling the canals of the nerves to the bottom, which is the best, or when this cannot be done, in filling the tooth, to introduce a wire into the common chamber of the nerves, to be afterwards withdrawn. The hole thus left open may be always kept open with a bristle, and the irritating fluid find an outlet.

3. A third cause of simulated tic douloureux, one not unfrequent, and pretty sure to be overlooked from its great simplicity, arises from two antagonist teeth striking too hard together; disproportionately so, to the rest of the teeth. This cause requires for its detection only a very simple examination; and for its cure a very little filing at the point of contact—*by no means extraction*—unless there be some other cause for the operation. The application of a leech to the root of the tooth, in this case, will insure a speedy and entire removal of the inflammation, that has caused the temporary elongation of one of them.

4. The last source of error from confounding tic douloureux with diseases of the teeth, that I shall now mention, and sometimes the most obscure of them all, occurs when the wisdom tooth, from want of room in the jaw, combined probably with some obliquity in its direction, in endeavoring to perforate the gum, strikes below the crown of the last molar tooth. Hitched, if I may so express myself, under it, the pressure causes a partial absorption of the fang, and thus insures its own imprisonment. The pain is excruciating, and felt every where except at the actual seat of disease. It will not unfrequently, however, fasten upon one of the bicuspid. This will in all probability be sacrificed, as well as others, before the real state of things is discovered. And I would remark, that *always* when a patient suspects a bicuspid, which the physician is satisfied is sound, the wisdom tooth should be suspected. There will generally be found disease of some sort there.

This last mentioned source, then, of simulated tic douloureux, is commonly less liable to suspicion, from the cause being buried deep beneath the gum, entirely out of sight. It may be detected, however, if the attention be once directed to the point; and the extraction of the last molar will prove a speedy and effectual cure. It is no wonder, however, that in these cases, after having had nearly every tooth but the right one extracted, both patient and physician should settle down into the belief that the case is one of confirmed, hopeless, and I might add, helpless tic douloureux.

It may perhaps be asked, why not at once extract a suspicious tooth, and so end the doubt? I reply, not because it is unscientific, barbarous and useless—not because it is on a par with the practice of shooting into the tree, and leaving it to chance to decide whether patient or disease shall fall first—but because it is frequently unnecessarily insuring great discomfort to a patient's whole after life. It is a matter of some consequence to a man, whether he is to go toothless or wear artificial teeth—or, in other words, whether he is to swallow half masticated food, or be obliged to live the remainder of his life on soft or liquid food. “Off with his head—So much for Buckingham,” has been the popular principle with regard to the teeth; and one which has been too much strengthened by medical influence and advice. I believe there are very few, if any, cases of simulated tic douloureux which may not be detected by a little careful and patient examination, and no victim sacrificed but the right one—and that only when the end cannot be otherwise attained. And it certainly betrays both want of skill and want of honesty, to add to the pangs of this painful disease the infirmity of a prematurely toothless life. A physician should no more extract a tooth by way of experiment, than he should amputate a limb from the same motive; and certainly he would not, could he in any degree realize the annoyance and discomfort so frequently endured from this apparently trifling cause.

The tic douloureux will frequently seem to indicate some one tooth as the seat or origin of the disease. Extract it, and the pain will fasten upon another; very frequently upon the next tooth, which is soon condemned to the same fate; and I have repeatedly seen patients who had thus deprived themselves of every antagonist tooth (leaving none for mastication but the incisors), in a vain hope of cure.

How, then, can the genuine disease of the tooth be distinguished from the false? Careful examination must be made by pressure upon the sides, roots and crown in every direction, to learn if there be any soreness felt. Examine with a mirror and an instrument in every part, to learn if there be no caries. Dip the fingers in cold water, and seize the tooth between them, or inject cold water with a fine syringe about the tooth, to ascertain if there be no sudden sense of aching. In the same manner try warm water; and conjoin this with all the historical evidence of the case. Examine, with especial care, the wisdom teeth; or the gum, if *they* are not yet through—and, *above all, reserve extraction as a last resort.*

The tic douloureux and toothache of pregnant women may be frequently entirely cured by a single leech, or a little of the ointment of veratria, in the proportion of from one to three grains to the drachm of simple cerate, rubbed over the face, along the course of the nerves, till the sensation of tingling, which is usually accompanied by relief, is induced.

Doubtless other causes of simulated tic douloureux exist, but in the foregoing remarks I have thought proper to confine myself to such cases only as have most frequently come under my own observation.

I cannot close these remarks without one observation. The science of dentistry should have for its exclusive object the treatment and cure of the diseases of the teeth; not, as is too frequently done, by the summary process of extraction; that is reversing its object—but by arresting the progress of disease, and retaining, to the utmost possible, these valuable organs. What would be thought of the surgeon who should propose amputation of the finger joints, to avoid the pain of every little phlegmonous affection of those members; or extirpation of the eye as the cure of every little inflammation or derangement of that organ? Yet if the principle be sound in the one case, it is so in the other. Extraction, like amputation, should only be resorted to when the disease cannot be otherwise relieved; and nothing is more common than to find mouths almost wholly stripped of their teeth, in the vain experiment to ascertain if the loss of this or that tooth will not cure the tic douloureux. A scientific dentist will very rarely fall into that mistake; and the miserable results of their operations, who, instead of searching into their pathology, endeavor to treat the diseases of these organs as if they were mere mechanical bodies, and to be treated by purely mechanical means, should prove a warning, if one were necessary, to the conscientious and scientific dentist.

APP. II.—*On the Use of Ergot in Protracted Parturition*; a paper read before the Boston Society for Medical Improvement, by
EDWARD WARREN, M.D.

THE exhibition of ergot in cases of lingering labor, seems still to be regarded as a matter of doubtful expediency. An English physician, whose lectures have recently been published, denounces it as highly dangerous both to mother and child. In France, a few years

ago, it was almost unknown. Even in America, where it has been, and is used, much more extensively, under the sanction of Dr. Dewees, there is much prejudice against it, and much uncertainty in regard to its exhibition. Many are reluctant to give it, on account of the danger that may be done the child, if the uterus be excited to increased efforts, and the child be subjected to this action for any length of time.

This objection applies, however, rather to the abuse than to the use of ergot. Without doubt, if exhibited at too early a period, or under unsuitable conditions, it may occasion the death of the child, and may perhaps be injurious to the mother.

We often meet with patients of feeble constitution and general bad health, who have been "ailing" during the last weeks of pregnancy, who have suffered much from pain in the back, and perhaps have bearing-down pains of greater or less severity, coming on and going off, for several days or even weeks previous to the actual commencement of labor. When it does come on, the pains are irregular—sometimes attended with great suffering—but inefficient, and there is no perfect interval of ease. The patient often suffers more in the interval than during the pains. We find the soft parts fully relaxed, the os uteri completely open, and the head low down. Still all the suffering of the woman seems to no purpose; there is no perceptible obstacle to delivery, but the child is not born. There seems not to be vigor enough in the system for the uterus to take on spontaneously a regular and efficient action. It would seem that some of the muscular fibres of the uterus acted without the others, and hence one portion of the womb remained unaltered, whilst the contractions were going on in other portions. The ergot then calls into action the fibres which have hitherto been passive, and the pains become regular and efficient. If this is, at all, a just view of the action of ergot, does it not appear at once that it is more for the child's advantage to be subjected to this regular and equal action, than to an irregular pressure in particular parts.

I have referred to this state of things as taking place in women of feeble constitution, or in those who are at the time in bad health; but the same conditions may occur in healthy women, and the use of ergot be equally proper. * Nor do I speak of women of feeble constitution as particularly liable to protracted labor; many such women, to their own surprise and that of their friends, bear children with little comparative difficulty. The looseness of their fibre allows of the parts yielding readily for the passage of the child.

Another case in which ergot is of the utmost utility, occurs when the labor is nearly accomplished and the pains suddenly subside. Several years ago, for instance, I was called to a woman whom I found far advanced in labor of her sixth child. The parts were fully relaxed, but the pains very irregular—sometimes leaving a very considerable interval between them. I staid with her from 7 P. M. until 2 A. M. About 12, the pains had subsided, and for the last two hours none had occurred; nor was there any prospect of their return. The head was as low down as possible, and I was perfectly certain that the first return of the pains would deliver her immediately. To leave a patient under such circumstances is rather an awkward affair; nevertheless, as my patient wished to sleep, I did leave her, desiring that I might be sent for the moment the pains recurred. I was not disturbed that morning. During the day and night succeeding, I still heard nothing from her. About 6 in the morning, however, twenty-eight hours after I had left her, I was sent for in great haste, and although I made all possible speed, the child had been born some minutes before I got there. The child was very large and hearty, and the mother required no subsequent treatment. Her preceding labors, she said, had been easy and rapid. The singular and disagreeable position of a patient obliged to remain for such a length of time, with her infant almost born, may well be imagined. Now, if we have a medicine capable of causing the return of the pains in a case like this, is it not invaluable? I do not now recollect what deterred me from giving it in this case—whether it was the prejudices of the patient, or my not being at that time in the habit of using it.

I propose now to give a brief account of the cases in which I have given ergot for the last year or two.

Dec. 20th. Mary Ann M——, seventh confinement. Had been ill with severe catarrh, cough and pain in the back, for a fortnight previous. I saw her in the middle of the forenoon. She had then, by account, had many severe pains, but they had gone off. I was sent for again at 2 P. M. The pains were sharper, but still irregular. In the evening, the pains were stronger and more frequent, and I found the os uteri and soft parts fully dilated. Towards morning there was a longer interval between the pains. At noon they increased in force and frequency, though with occasional intermissions. The pains were now very distressing, and the intervals without ease—the head very low down, and there was no apparent obstruction to labor. About 4 P. M. I ruptured the membranes, by a slight pres-

sure with my finger nail, and the character of the pains not improving, about 5 P. M. I gave ten grains of ergot. The pains directly became stronger and more regular; and in twenty minutes the child was born. It was perfectly lively and healthy, and neither child nor mother required subsequent attendance.

In the next case, a first labor, the pains commenced about noon. I saw the patient late in the evening. They were then irregular and inefficient, and about 2 A. M. had nearly ceased. I gave her ten grains of ergot, which produced no perceptible effect. I repeated the dose, but this excited vomiting; and finding it impossible to persevere with it, and the pains having entirely subsided, leaving no prospect of their return, I took my departure. The child, however, was born at 4 A. M., two hours after the exhibition of the first dose of ergot. It was hearty and robust, and the mother as well as possible the next morning. Owing to imprudence and over-exertion, she had slight inflammation of the peritoneum two or three days after; but this readily yielded to treatment, and she had no subsequent bad symptoms.

Oct. 29th. Mrs. J. She had borne several children previously. I saw her about 10 P. M. The pains commenced about twenty-four hours before I saw her. I found the soft parts fully dilated, but the pains lingering and inefficient. After waiting until about half past eleven, I gave her \mathfrak{D} i. of ergot. This was repeated in half an hour, and again in half an hour after. So that she took \mathfrak{z} i. without immediate effect. The child, a girl, was born at 2 A. M. It did not breathe free at first, but upon being placed in warm water and subjected to friction for some time, it became sufficiently animate. At my subsequent visit the same day, I found the mother sitting up. She had no legitimate husband, and the rapidity with which women in such circumstances recover from the effects of labor is well known. She was able in a few days to return into the country, leaving her child at board in town, where it has ever since continued without once requiring medical advice.

May 10th. Catherine C., a black—several children. In this case the pains had continued irregularly for several days, and I was called to her about three days before her actual confinement. Now, finding the parts fully dilated, I gave her \mathfrak{z} i. of ergot. The pains soon became stronger, and in about an hour the child was born. The contraction of the uterus was perfect—after-pains slight. Mother and child both did perfectly well.

June 15th. Mrs. P.—first labor. After much fatigue encountered in removing from the city to East Boston—pains and slight flowing came on June 14th, one month earlier than was expected. As the pains, when I saw her, were slight, and as she strenuously objected to an examination at that time, I determined to endeavor to postpone the labor by venesection and opiates. I bled her very freely, and directed the free use of laudanum. The next evening, however, I was sent for about 6 P. M. On examination, I found the soft parts fully dilated, and the labor progressing. The pains, however, occurred at irregular intervals, and not being sufficiently strong to effect delivery, after waiting four hours (until 10 P. M.), I gave her \mathfrak{D} i. of ergot, which was repeated in an hour. The child was born about half past eleven. Both mother and child did well.

Aug. 22d. Mrs. D.—fifth child. Sent for about 5 A. M. Mrs. D. is of feeble constitution, and her general health is very bad. Has been very unwell for several weeks past. The pains commenced two or three days ago. Now lingering and inefficient, but soft parts fully dilated. I gave her \mathfrak{D} i. of ergot, and in half an hour repeated the dose. The pains soon became stronger, and the child was born about half past eight. After-pains rather severe. The child was hearty, and the mother soon got about her usual household employments.

Jan. 9th. Mrs. S.—second labor. Called in haste this morning, Monday. She says that the pains commenced Saturday night, and towards Sunday morning became very severe. During the day they were less strong, but increased during the night. This morning were very severe, but are now slight. I left her and repeated my visit about half past six P. M. Pains now much stronger, os uteri fully dilated; no rigidity of the soft parts. The head was still high up, but in other respects every thing was exactly in the state for the exhibition of ergot. The pains were strong and sufficiently regular, without intervals of ease, being precisely of that character which is distressing without being efficient. I gave her twenty grains of ergot, and the pains almost immediately changed their character, became violent, and the child was expelled in twenty minutes. The mother did perfectly well, and the child is to this day, May 4th, remarkably healthy and flourishing. This is one of the most satisfactory cases in which I have given ergot. There is no doubt that the labor would have continued six, or at the least, four hours longer, had it not been given.

In all the cases in which I have given ergot, the children have been and continued perfectly hearty and healthy. In one case mentioned above, the child, when born, did not breathe freely; but even there, respiration was established without difficulty, and it continued perfectly well. In every case in which I have myself prescribed it, delivery has taken place within two hours after its exhibition. Some women are sooner affected by it than others, in the same manner as some are sooner acted upon by cathartics or by stimulants than others; still its action could be sufficiently distinguished in every case. I have never premised venesection in the exhibition of ergot. Given under the conditions I have mentioned, I should not consider venesection necessary or proper.

I should never (except in some emergency) give ergot before the parts were fully relaxed; nor except where the presentation was natural, and no obstacle to delivery, but from the nature of the pains. If the pains had at first been regular and strong, with perfect intervals, and the labor was protracted without apparent cause until they became slighter from exhaustion, but still suffered no intermission; or if they still continued strong, I should hope for little from ergot. That is to say, if the organ had been doing its duty until it became exhausted, I should hardly expect ergot to act beneficially; neither should I expect benefit from the endeavor to excite it to increased action while the pains were already strong and regular, but unable to accomplish delivery.

ART. III.—*An Abstract of 500 Cases of Midwifery*; a paper read before the Boston Society for Medical Improvement, by D. HUMPHREYS STORER, M.D.

ALTHOUGH extensive statistical tables upon any single department of the profession can be prepared only by those who are connected with public institutions, where great numbers of cases are constantly presented; every practitioner, by offering the results of his own practice, however limited, may facilitate the investigations of others. Entertaining this belief, I make no apology for presenting you the following notes, based upon 500 cases of midwifery.

Presentations.—In 492 of these cases, the head presented. In the 8 remaining cases, the presentation was as follows. Two were

inches. I have met with one case only, where the cord exhibited a knot—and in this case the knot was single.

Twins.—I believe the general impression is, that twin cases are unusually tedious; and Bard, in his “Compendium of the Theory and Practice of Midwifery,” observes that “twins are generally delivered after a labor more slow than that of a single child.” And Dewees says, in his “System of Midwifery,” “the labor of a woman pregnant with twins, begins in every respect like a labor in which there is but one; but its progress in general is neither so regular nor so rapid.” In the 500 cases of labor now referred to, only 3 cases of twins occurred. In two of the cases, both children were females; in the third case, one was a male and the other a female. Each of these cases was rapid in its progress. In one of them, the woman, while stepping into a stage coach, felt the waters passing off, without having had the slightest premonitory symptoms of approaching labor—and in less than an hour was delivered.

In another case, the patient, who had been all the day performing her ordinary family duties, was sitting at her tea-table when the membranes were ruptured. She immediately went to an adjoining bed-room, and was relieved by the following pain. The children were born almost simultaneously.

In the third case, my patient was in labor about an hour.

Having examined a large number of tables, I find that a case of twins occurs in about every 70 cases of labor. In the practice of some of the foreign hospitals, 1 case is met with in 90 cases; while in the practice of several private practitioners, they are as frequent as 1 in every 60 cases. In my own practice, it will be observed that a case of twins has been as rare as 1 in 166 cases.

Deformities.—Four instances of deformed children are registered with my cases. Of these, one was an acephalous monster; one presented a spina bifida; one had distortions of both feet—varus; and one exhibited a hare-lip.

The case of spina bifida (the preparation of which belongs to the cabinet of this Society) occurred in a first child, and this deformity rendered the labor a tedious one.

I copy the following note of the acephalous child from my case-book, made at the time of its birth, September 11, 1832. “Mrs. T——, wife of a sea captain, in labor one hour with her fourth child. Has always had rapid labors, and well formed, hearty children. Head of child presented. Upon examination, the head was found to have

neither frontal, parietal nor occipital bones. The cerebrum was covered with the dura mater, which was ruptured in the passage of the head, and a small portion of the brain protruded. Fearful that the child might live for some time, a maimed and disgusting object, I requested the nurse to make no effort to save its life. It was not even dressed. In this state it lived 24 hours. It made no cry, but looked wildly around, and constantly stretched out its arms and legs to their utmost extent, as if affected with spasms. Upon examination after death, the cerebellum could not be found. The spinal marrow was perfect at the commencement of the column, but was not examined lower down. The child, a male, was in other respects well formed."

Cases are but rarely mentioned in the medical journals, in which the foetus is expelled with the *membranes unbroken*. In August, 1832, a lady was delivered at her full time, of her first child, a boy, enveloped in the membranes entire—much to the amazement of the nurse and her friends. In April, 1833, I met with another case, where the woman had advanced but seven and a half months in her pregnancy. My notes read thus—"I could not break the membranes—was obliged to cut them to release the child, which was alive and active.

In the first volume of the London Medical Gazette for 1840, Mr. Burgess reported a case of apoplexy, in a new born infant, which proved fatal in about an hour after its birth. Just previous to its death, a small quantity of blood flowed from its left nostril; and upon examination after death, "serous and bloody effusions were discovered within the skull and under the scalp." In May last, I delivered a lady of her first child, a large healthy-looking infant. While the head was passing the lower strait, it was much compressed during the occurrence of three or four unusually severe pains. As soon as it was born, the child cried loudly. In three or four minutes after the cord was cut, a little blood was seen oozing from one of the nostrils. At first it flowed very slowly, afterwards more rapidly; and in six or eight minutes the child ceased to breathe. I was not able to obtain a post-mortem examination.

During the last season, I reported to this Society a case of very sudden death which occurred in a woman in labor with her first child. The parietes of the neck of the uterus, upon a post-mortem examination being made, were found to be partially ruptured—the peritoneal coat not being lacerated.

Several members of the Society expressed their doubts, at that time, as to this lesion having been the cause of death. Collins, in his admirable "Treatise on Midwifery," offers the following remarks. "In 9 of the 34 cases, the peritoneal covering of the uterus did not give way; the injury being confined to the muscular substance; yet death ensued equally speedily—showing that the free admission of air into the abdominal cavity, is not necessarily followed by any increase of danger."

It will be remembered that the case referred to, was a woman in her first labor. Collins observes, that for a long time he supposed that women in labor with a first child, were rarely liable to ruptured uterus, and that this idea is common with writers on the subject. Seven, however, of the 34 cases reported by him, were first pregnancies. He adds, "he is fully satisfied that the patients in greatest danger of rupture, are those who have previously suffered from difficult and protracted labors."

I have met with a single case only of fatal *puerperal peritonitis*.

The notes which I have now presented the Society, were made for my own gratification, when the cases, to which they refer, occurred. Could I have foreseen that they would have been offered to you, I should have entered more into detail, and thus rendered them more worthy your acceptance.

ART. IV.—*Scarlet Fever—Cases and Remarks.* By ENOCH
HALE, JR., M.D.

SINCE the beginning of December, 31 cases of scarlet fever have come under my observation and care—6 adults and 25 children. Of this number, 21 were mild in their primary, or proper febrile stage; so much so, that little or no solicitude would have been felt in regard to the result, but for the sort of undefined anxiety arising from the general character and uncertain tendencies of the disease. Ten were severe in the first attack; four of these were fatal, two in the first stage, one on the third, the other on the ninth day; the two others in consequence of remote effects in the fourth and fifth week. These cases will be noticed more particularly hereafter.

Three of the 31 had severe cerebral symptoms. In two, these

symptoms were relieved, and apparently removed, although both of them afterwards died of a different affection. The other was rapidly fatal, as follows.

A remarkably bright, intelligent and healthy boy, eight years old, who had always been prone to partial delirium, on slight illness, returned from school on Friday evening, February 12, in perfect health and great animation of spirits. In the course of the night he was attacked with vomiting and diarrhœa, which continued through a part of the next day, but without being very severe, or exciting any apprehension. On Sunday morning he was evidently more ill, and I was called. It was now unequivocally scarlet fever. There was considerable swelling of the throat, great heat, especially about the head, &c. Cold was applied to the head, ice to the throat, and a mixture of spirit of nitrous ether, chloric ether and liquid acetate of ammonia was given. In the evening, the head and throat were worse, and there was an eruption upon the whole body, with great heat of the skin. The pulse was very quick, small and feeble. Leeches were applied to the throat externally—cold applications and ice continued. Creosote in mucilage was occasionally poured slowly into the mouth, as a substitute for a gargle.

Monday morning, the heat of the head continued ; eyes red, pupils contracted ; the throat less swollen externally, but with much rattling in respiration ; complete insensibility to surrounding objects. It was not a true coma, nor ordinary violent delirium of meningitis, but something between them. There was occasionally a violent, fractious outcry, with intervals of stupor. He had leeches to the temples, and a cathartic of infusion of rhubarb with magnesia.

At 1 P. M. he was in great distress ; dyspnœa ; lips and face, and extremities, livid ; eruption, which was still out, of a dark color ; skin burning, but puffy. He died two hours after.

At this visit, I made use of a substitute for a bath, which proved of such convenient application, that it may be worth mentioning. Seeing the patient in such distress, I was strongly impelled to a desire to try the warm bath ; but the time that would be required to prepare it, and the doubt whether he could bear to be lifted into it, put it out of the question. As a substitute, we spread India rubber cloth upon the bed ; and dipped a blanket in warm water, and wrapped him in it, covering this with a dry warm blanket. The whole was accomplished in five minutes, with almost no fatigue or exposure to the patient, and appeared to answer all the purposes of a full bath.

The severe distress was very much mitigated, and continued to be so till he died. I have since several times tried this method of bathing for children, and with very pleasant effects.

Just a week later, a sister 5 years old, of the same general temperament and character, was attacked—Saturday, February 19th. She had waked once the previous night and complained of her throat; but the feeling soon passed away, and in the morning she was as bright and playful as ever. About noon she again complained, and I was called. There was some redness about the fauces, and a little swelling of the throat externally; some heat of the skin; but she was still cheerful and playful. She had passed one very offensive stool during the morning, and the breath was fetid and characteristic. I gave her an emetico-cathartic of ipecac. and calomel, with a free use of ice in the mouth, &c. She vomited three or four times a greenish and yellow fluid, and had one dejection which was quite offensive. In the evening there was some appearance of eruption. The aspect of the case did not, on the whole, seem very bad. The same was true the next day. The eruption was well out, of a good color; the throat considerably, but not excessively, swollen; considerable heat and thirst. She swallowed without difficulty, and took ice and cold drinks freely. Sunday evening, there seemed a slight tendency to somnolency; the eyes a little red, and pupils rather contracted. There was at the same time perfect intelligence and quickness of intellect. She had taken in the morning, infusion of rhubarb with magnesia, which had operated two or three times. We now applied two leeches to the temples, and continued the cold applications.

Monday morning, she had slept, or seemed to sleep, through the night, and now could not be awakened. It was not the insensibility of ordinary coma; neither was there any appearance of the active delirium of the preceding case. It was rather a restless sleep, with frequent tossing and moaning, from which she could not be aroused. Every attempt to arouse, seemed to distress her; she turned away, and moaned. She did the same when liquids were offered her, and resisted when they were put into the mouth, although she swallowed pretty readily such as were actually poured into it. The eyes were rather red, and the pupils strongly contracted; the skin was hot in the morning, but towards noon became cooler, and the eruption disappeared. In the afternoon it was quite cool and pale. She took, at noon, six grains of calomel, followed by a spoonful of castor oil; from which she had two or three dejections of

a dark color and offensive. She was afterwards put into a spirit bath, managed as before described, but with a smaller blanket; and took every two hours a mixture of spirit of nitrous ether, chloric ether, and syrup of tolu. She continued nearly in the same state, except that the skin became warm, until 5 o'clock the following morning, when she waked up bright and intelligent again.

At 8 o'clock (Tuesday, February 22), the eruption had reappeared over the whole body; the eyes were natural; indeed, every appearance of peculiar cerebral affection was gone. The mouth and throat were red, and covered in patches with thick masses of lymph. The throat externally was much swollen, and there was considerable deafness. The temperature of the body was more than sufficient, and she preferred cold drinks. For the next two days, the symptoms continued to be favorable; though with only a moderate degree of improvement. On Friday morning she was intelligent, and received me with a sweet smile, but afterwards became more feeble, and at times reluctant to take any thing. On Saturday the unfavorable symptoms were increased. The swelling of the neck had gone down, but the mouth was parched and dark-colored; she swallowed reluctantly, and with difficulty, taking nothing willingly. She was restless and wandering, and took no notice of any thing, except to resist taking whatever was offered her. The eyes were kept closed, but on examination their appearance was natural. The pulse, which on some previous days had become pretty good, was now exceedingly quick and feeble. For two or three days she had taken a little wine whey, and an infusion of serpentaria. The spirit bath, which had been several times used in the course of the week, was now again repeated, and she was plied with various stimulants, changing them as one or another seemed to be more or less favorably received. In the afternoon, injections of brandy and arrowroot were given; but they were not retained long enough to be of any service, though several times repeated, and with laudanum added to them. Neither did they excite the bowels to any action so as to produce any faecal discharge. She died at 11 o'clock in the evening.

. In this case I was not able to discover any indication of a renewal of active local disease, although I certainly sought earnestly for it. It would rather seem that the recuperative power of the system was destroyed, or at least greatly impaired, either by the violence of the head affection, or, much more probably, by the nature of the general disease. Something like this is often observed to a certain degree in other diseases; but it is much more observable in this; and we shall have

occasion to notice other examples of it, though perhaps less marked than in this case. Here there was such an obvious improvement for two or three days after the violence of the local affection had subsided, as to afford an encouraging hope of recovery. And when this hope failed, it seemed to be more from the want of energy to carry on the restorative process, than from the excitement of any new morbid action.

In four or five cases only, the affection of the throat, in the primary attack, was rather severe. In none was there deep or extensive ulceration or sloughing.

In 14 cases out of the 31, there was a secondary attack. By this I mean a renewal of the disease in another form, after the febrile stage had passed away, and the patient had seemed in a greater or less degree convalescent. In nearly all these cases, I believe in all but one, the convalescence had advanced so far, that I had discontinued my visits, and was recalled. In some, the interval was of only a few days' duration; in others, of three or four weeks. In 12 cases the secondary attack consisted of, or was accompanied by, a swelling of the glands of the throat, severe in five cases, mild in seven. There was otorrhœa, with temporary deafness, in three or four cases; in one of these the deafness was complete for one or two weeks. In three cases there was a return of the eruption after an interval of more than a month, exhibiting very nearly the same appearances as at first, and continuing for two or three days. In one case the secondary attack was a general anasarca, with a slight return of sore throat, coming on three or four weeks after the first attack, which had been severe, and a fortnight after convalescence had been established. The face was highly œdematous, and the limbs considerably so. The patient was not quite confined to the house by it, and the whole went off in four or five days. Several of the other cases are too recent to make it certain whether there may not yet be secondary attacks in them.

After the swelling of the glands had subsided, there was in several cases a remarkable disinclination to take either food or drink, although the symptoms generally seemed to indicate some preparation for nutrition, and the state of the patient to call rather urgently for support. The soreness of the throat had in a great measure passed away, so that there was no difficulty of swallowing; and there was no remaining fever or active inflammation apparent to account for the disinclination. I can only explain it by referring it to the effects of the copious excretions from the mouth and throat, passing into the

stomach and occasioning nausea and anorexia. Indeed, these were attended by occasional vomiting. In three cases, this reluctance to take food was so great, and continued so long, as to cause much anxiety for the result, while the other symptoms promised favorably; and in one, the fatal result seemed to be in no small degree occasioned by it.

A little boy, 3 years old, was seized with scarlet fever about the 20th of January, in rather a severe form from the first, though not excessively so. About the fourth day there was a severe affection of the head, which was promptly relieved after the application of leeches. For several days following, there was very considerable amendment. Then came on great swelling of the glands about the throat, followed by discharge from both ears and entire deafness. When the swelling diminished a few days later, the inflammatory symptoms and fever nearly disappeared. But there was not only no disposition to food, but the small quantity of nutritive liquids that he could be persuaded to take, was immediately rejected by vomiting. Cold water, which was the only thing that he drank willingly, was uniformly rejected in the same manner. Of course he lost strength rapidly; the skin became pale and inactive; the mouth and tongue and throat covered with a dark-colored incrustation; and there was a copious excretion of slimy mucus, intermixed with dark offensive matters, such as might be produced by superficial sloughing.

After trying, for two days, a great variety of nutritive and stimulating articles, without any success, every thing being vomited, we left the stomach entirely at rest from all ingesta, with the exception of cold water when he desired it urgently, and depended upon injections. An enema was given every four hours through the day, leaving him at rest during the night, composed alternately of four ounces of arrow-root with a table spoonful of brandy, and at each intermediate period, of the same quantity of beef tea, or mutton broth, and with the addition to each of a few drops of laudanum. This course was continued fourteen days. The quantity of laudanum was gradually increased from 6 to 12 drops each time. The injections were retained, in most instances perfectly, and were apparently well digested. Once a day, commonly no more than that, there was a discharge of fæcal matter, of a tolerably natural appearance, and a part of the time moulded like the fæces in health. For the first two or three days of this course, there was little change; then the mouth gradually assumed a better appearance, the lips came

to a bright red color, the skin became more active, the hearing returned to a very considerable degree, and the strength improved so much that he sat up in bed and amused himself with his toys, sometimes for two or three hours. Still the aversion to food was not removed; and the cold water was vomited almost as soon as it was swallowed. This favorable state of things lasted somewhat more than a week, each day with some apparent improvement. Then there came on a cough, with dyspnœa, inability to lie in the usual posture, but requiring the shoulders to be raised more and more each day—loss of strength, &c. I could not well make a very thorough examination, but I observed distinct crepitous râle at the bottom of both backs. He died the 21st of February, near the end of the fifth week of the disease.

There can be little doubt that the immediate cause of death was the pneumonia, which came on as the third distinct attack of disease; although it may be regarded as very doubtful whether he would have been able to recover from the exhaustion occasioned by the previous attacks, even if the pneumonia had not supervened.

In one case, the secondary attack was in the form of pneumonia. A little girl, 27 months old, had scarlet fever in the very mildest form, on Sunday, February 13th, and before the end of the week became entirely convalescent. On the following Sunday she went down stairs, but without any exposure. In the night she had restlessness and fever; and on the following day, February 21st, there was well marked pneumonia. There was crepitous râle over the full lower half of the right back, with all the attending indications of pneumonia, both rational and physical. The following day the respiration was strongly bronchial at the same part, and there was dullness of percussion; and on Wednesday it had changed to a coarse crepitus. The cough was now loose, with easy and abundant expectoration. The sputa were of course all swallowed, as is usual with children, but the character was sufficiently obvious from the copious, dark bloody, slimy dejections. She passed, in the course of the next day (Thursday) into a state of extreme exhaustion and debility; pale, without any febrile paroxysms, respiration panting—not remarkably rapid—cough frequent, very loose, and peculiarly languid, as if there was not sufficient energy to throw up the great quantity of matter that overflowed the air passages. All this was accompanied by an extreme reluctance to food or drink, with occasional, but not frequent, vomiting. She was fed chiefly on brandy, in milk and wa-

ter ; of which she took a quantity equivalent to a tea-spoonful of fourth proof brandy every two hours, night and day, for three or four days. By this time she began to take a little food willingly, and at the end of a week the brandy was nearly discontinued. The disease of the lung had so far subsided, that tolerably good respiration was heard in every part, with a considerable intermixture of mucous râle. There was some improvement in the strength and general appearance ; but these symptoms were at no time altogether satisfactory. The cough had become much less frequent.

On the 7th of March, there was a decided falling off. She had lost her inclination to food ; the breathing was more labored, and she was evidently more feeble. The respiration was scarcely audible in the right back ; and there was a coarse mucous râle over the whole left back—percussion flat in right back, quite resonant in left ; cough not frequent, quite loose, and almost always accompanied by expectoration and swallowing. She died on the 10th of March.

Examination.—I had opportunity only for a hasty inspection of the chest. The right pleural cavity was filled with somewhat more than a quart, by estimate, of sero-purulent liquid. The lung was compressed against the posterior wall, along the whole length of the cavity, and adhered closely, so as to give the appearance of being wholly wanting. The interior of the cavity was lined with a coating of lymph. The lung itself was firm and fleshy, and when cut into fragments, sunk readily in water—the upper portions somewhat less quickly than the lower. The left lung was not diseased. The bronchia of both lungs contained some semi-purulent fluid, but exhibited no marks of inflammation. Heart well.

In the earlier part of this disease, I had sufficient opportunities for physical examination, and I have the fullest confidence in the correctness of the observations made at that time. At a later period, during and after the apparent convalescence, there was more difficulty ; and from the circumstances of the patient, physical examinations were both less frequent and less thorough, so that the progress of the effusion of fluid in the chest was not noted.

I have mentioned one case in which there seemed a third attack of disease ; first, the febrile attack with eruption, then the swelling of the glands of the neck, then pneumonia. In another case, the three several attacks were quite distinct. A boy, 3 years old, had very mild scarlet fever the first week in December ; having a well marked, though not profuse eruption, and a slight affection of the

throat. After a few days he entirely recovered, except some little remains of debility and fretfulness. On the 6th of January (a month later), the glands of the neck became swollen and painful, and in a few days he had a return of the eruption, much more profuse than before.* The general illness at this time was more grave than at first; but it was mostly gone by the 15th of January, and in a few days more he seemed stronger and every way better than after the first attack. On the 26th he became anasarcaous over the whole body, with great prostration and exhaustion, from which he recovered slowly and with difficulty. He is now entirely well. In several other instances I have seen some appearances of a third attack. Ten years ago I met with a case, in a brother of the little boy just spoken of, that proved fatal in the fifth attack. The first was in the usual form, rather mild; the second was the usual swelling of the neck; the third, anasarca of the lower limbs; the fourth, ascites; the fifth, dropsy of the chest, which carried him off in two or three days. Between each of the several attacks, there was a seeming recovery so complete, that my visits each time were intermitted for several days, notwithstanding the solicitude of anxious parents, and the watchfulness suggested by previous returns of disease.

During the period embraced in the preceding remarks, I have seen 21 other cases of sore throat that seemed to have more or less relation to the same disease. Two or three of these were very light, and were accompanied by a slight eruption, and might possibly be regarded as scarlet fever, though not distinctly marked as such. Three were violent inflammations of the fauces, with symptomatic fever. The rest were mostly the affection which frequently attacks those who have been much exposed to scarlet fever, and which seems to me to bear nearly the same relation to that disease, that the varioloid disease does to smallpox. One only of these cases was of such a character as to demand any particular notice.

A woman, aged 50 years, had for a week or two been employed in the care of two children with scarlet fever, one of whom died. A short time after, she complained of sore throat, but continued her occupations for a week. When I saw her she had been two days confined to the bed. The throat was now nearly well; but there was great prostration, with an appearance of severe disease, and the pulse was 140. Still there was no particular complaint, and on a

* Another member of the family had a second attack of sore throat and eruption at the same time, and after the same interval. Both attacks were quite mild.

thorough examination I could find no indication of any local inflammation. The next two days the pulse continued as high as 120; but on the fourth day there was a considerable amendment, and the pulse was but 100. On the fifth day there was a great increase of disease. The pulse was again 120; there was cough, with rusty sputa—crepitous râle in the left back, followed the next day by bronchial respiration and dull percussion. There was again a considerable appearance of improvement, after a few days, followed by another exacerbation, and she died about ten days after my first visit.

The whole upper lobe of the left lung, and the upper portion of the lower lobe, was in a state of grey hepatization. The remaining portion of the lower lobe was nearly as solid; but was of a dark-red color. In it were two or three small patches of effused blood, and some slight appearances of incipient gangrene.

This may possibly be regarded as a case of simple pneumonia. But I cannot easily resist the conviction that the morbid action was modified by the preceding disease, in a manner analogous to the influence upon pneumonia consequent to scarlet fever.

It has been no part of my design, in these remarks, to give a narrative in detail of all the phenomena either of the disease or the treatment of the several cases; but only to notice some of the more prominent phases of the disease, as they presented themselves to my observation. Neither does this paper lay any claim to novelty, either of fact or speculation. Scarlet fever unhappily has been too common among us for several years past, to leave much room for new discoveries in regard to its phenomena; and for mere speculation I have little respect. But this very frequency of occurrence gives it the highest degree of importance to practical men. Every original observation, therefore, if faithfully reported, will attach to it some degree of interest, however humble in itself, or however unimportant the suggestions that may accompany it.

March 31, 1842.

• ART. V.—*Comparative Frequency of Tuberculous Disease.* By J. B. S. JACKSON, M.D.

THE following is an analysis of dissections made during the last ten years in this city or the immediate vicinity, and tending to confirm

the general statement, that in the temperate latitudes about one sixth or more of our race die from some form of tuberculous disease.

The whole number of autopsies I find to be 604.

Of these there were excluded 94 cases of patients dying from disease foreign to the lungs, and in which these organs were not at all, or not sufficiently, examined; also four cases in which there was a question between pneumonia and tuberculous disease.

Of phthisis there were 93 cases. Amongst these were included some cases of general tuberculous disease in children, and in which some of the other organs may have been as much, or more affected than the lungs. One of these last was a child that died of tuberculous disease of the brain, with considerable disease of the bronchial glands and only a trace in the lungs.

Acute meningitis in 16 cases, tuberculous disease being found in all of them, either in the lungs, the bronchial glands, or in both. The disease was undoubtedly tubercular, though in the first four cases reported, granulations are not mentioned as having been found in the membranes of the brain, not being acquainted at that time with the true nature of the disease.

A case of tubercular peritonitis, also, may be mentioned, in which, though the bronchial glands were considerably diseased, a single granulation only was found in the lungs.

In the above 604 cases, then, death is supposed to have been caused by tuberculous disease in 110, or in about one in $5\frac{1}{2}$.

In the remaining 396 cases, death was caused by some other than tuberculous disease; but in all the lungs were examined, and in a large proportion it is expressly stated whether there was, or was not found any such disease. Without doubt, the existence of tuberculous disease was occasionally overlooked, but, on the contrary, it was often noted when found in a very small or even minute quantity.

In the above 396 cases, there was no tuberculous disease nor any remains of any found in 306; the wilted appearance so often met with at the apex of the lungs, not being considered as satisfactory evidence of the disease having formerly existed. The existence of cretaceous matter, however, was so considered, and cases where this was found were noted as tuberculous, without any discrimination. In 46 cases, tubercles were found in the lungs alone, and in 21 in the lungs and bronchial glands. In 20 they existed only in the bronchial glands, and were in the cretaceous form in all except two. In two

cases there were cretaceous masses in the upper part of the thorax, supposed to be the result of old tuberculous disease, though there was no appearance of this last in the lungs, nor in the bronchial glands; neither was there in another case in which an extensive cretaceous deposit was found in the renal capsules, and which was similarly explained.

Several years since my attention was directed to the subject of the infrequency of the occurrence of the tubercular deposit in patients dying from malignant disease, and I was not aware for some time that the same remark had been made by others. Of 33 cases of malignant disease, in nearly all of which a careful examination was made for tubercles, it is expressly stated that in 24 none were found; six times they were found in the lungs alone, and in the bronchial glands alone three times.

Of 35 patients dying of various diseases, all of whom were decidedly intemperate, and most of them grossly so, in 26 no tubercles were found; in five there were tubercles in the lungs; in one in the bronchial glands; in one in the lungs and bronchial glands; and only two died of phthisis. In several of the most striking, the organs were as free from tuberculous disease as those of a new-born infant. All of these 35 are stated, in the recorded history of the case, to have been intemperate; probably others are so recorded, and the list might have been considerably increased; but no case has been referred to under this head, except where I happened to remember that the patient had been intemperate.

Intemperance certainly does not seem to develope tubercles, even if it has not some effect as a prophylactic; the remedy, to be sure, would be worse than the disease; but has it any such effect?

ART. VI.—*Section of Tendo-Achillis, of Adductor Longus, of Sartorius and Rectus Femoris, and of Tendon of Psoas and Iliac Muscles, in the same subject.* By JOSEPH SARGENT, M.D., of Worcester.

APRIL 25, 1841. There was brought to me from South Hadley, Massachusetts, a boy aged 10 years, of whose appearance and condition the following is a description. He is of dark complexion, with

sparse muscular developement, and a bright, highly intellectual expression. In standing, with the right thigh and leg straight, and the body erect, the left thigh is raised so that the left foot is lifted from the ground and the left leg bent on the thigh. In order to put the toes of this foot on to the ground, patient is obliged to stoop a good deal towards his left side, and then the heel remains raised, and the thigh flexed on pelvis and drawn inwards, with pronounced contraction of gastrocnemii, of semitendinosus, semimembranosus and biceps, of rectus femoris, and sartorius and adductor longus. From anterior superior spinous process of right ilium to external malleolus, is 25 inches, and to bottom of heel $26\frac{1}{4}$ inches. Corresponding distances in left limb are 24 and $24\frac{1}{2}$ inches. The right calf measures in circumference $8\frac{3}{4}$ inches; the left, $7\frac{1}{2}$. The left thigh is also much atrophied. There is some lateral curvature of spine, and a contraction of clavicular portion of left sterno-cleido-mastoid, lifting clavicle out of its articulation when head is erect, but allowing of its easy reduction when head is returned to its inclination towards the left side, where patient usually keeps it.

The patient is subject to frequent convulsive twitchings of the left thigh and calf, especially under excitement. These are so strong in the thigh as sometimes to lift it almost to the head, and patient has often been tumbled over in this manner against his will, while walking. There is some tenderness over lower part of sacrum (perhaps from lying on it); none elsewhere in course of spine. In walking, patient takes a short step with his right leg, and then a long one with his left, reaching the body so far over as to bring the hands almost to the ground. He makes very rapid progress in this manner, though it amounts almost to walking on all fours.

He is subject to frequent headaches, with nausea—often brought on by moral causes. He is of a very irritable temperament—being easily moved to laugh or cry. He talks in his sleep, and is very restless. Although prevented from going to school much of time for three years, his knowledge acquired by observation and reflection is far beyond what is common to his years.

The following history was communicated in a letter from his father. In March, 1838, in Boston, patient being then 7 years old, complained one night, after a long walk, of headache, loss of appetite and general weakness. He had had a fall about a fortnight before, which had jarred his head considerably, and had walked a good deal since. The next day he remained in about the same state as

that described, and for several days following kept to the house, becoming gradually worse, so that on the fourth or fifth day he was confined to his cot. His father watched with him on the night of this day, and finding him quite easy in the morning, was about to move him from the sitting-room up stairs, when on placing his hand under him to lift him, he discovered that "every limb and joint was as stiff as though he were dead." "For two weeks from this time he had no power to move a limb, not even to bend his neck, and scarcely to move his jaws," and had pain in course of spine, for which he was leeches and blistered in its whole length. After this time he began to improve, and in the latter part of May, two months or more after the apparent invasion of the disease, was removed to South Hadley. The improvement regarded the right side mostly, the whole left retaining its rigidity to some extent, so that patient was able to walk only limpingly. "The trouble seemed to be in the hip." He recovered the use of his right side first; then that of the left hand and arm, and finally a partial use of the left leg. From the time he began to improve, "he was very restless, unable to remain in any position a minute at a time, complaining of pain in his neck, arms and leg, which were so stiff that he could scarcely move them, and seeming to be in pain all over." The right side continued to improve, while the left was continually growing worse.

A younger brother of patient had been affected about a week previously in a similar manner—being "taken with general stupor, remaining so for about a week, and then being found to have lost use of right arm." He recovered gradually, but had at times excruciating pains in head, and especially on motion. Both of these patients had been in habit of getting up early in morning, and drinking, from the pump, water that had been standing in it all night. The pump was of copper, and supplied with lead pipes. This second patient was brought to me also, and I found him a stout, florid, healthy boy, with good physical developement, except of right arm, which hung atrophied at his side. The atrophy of deltoid was such that the whole head of humerus and the coracoid process could be readily felt; and the ligamentary anatomy of the scapulo-humeral articulation was very obvious. There was strong contraction of the pectoralis major, and of the latissimus dorsi, confining the arm to the side.

I advised for the second patient, and undertook the treatment of the first, who had been for about three months released from a course of mechanical treatment by corsets, pulleys and screws, continued

for eight months, and producing a good deal of constitutional irritation, without amending his condition.

April 27th. I divided the tendo-Achillis by the common subcutaneous operation, cutting from above downwards. The twitching of muscles of calf, to which patient had been so long accustomed, continued for several hours after the operation, and was painful. It then ceased, and patient became unusually quiet. During night he slept much better than common—not talking in his sleep, nor tossing about. On the 29th, I encased the foot, in a state of complete extension, in a starched bandage.

May 3d. Patient doing well, I divided the adductor longus, at a distance of about an inch and a half from the pubis—entering knife from inside of femur and cutting downwards. A small artery was divided, from which there was some hemorrhage at the time of the operation. Patient continued well through first, second and third days after operation; and on the fourth was bound to a mattress by a strap passing over his hips, confining pelvis, and one over each thigh so as to keep these in extension and abduction as much as possible. Thus confined, the patient was permitted to lie so as to look upon a military parade in street. At night he was very restless, and talked a good deal in his sleep about what he had seen during the day. Under his tossing about, some secondary hemorrhage supervened, which was troublesome till May 10th, when after having failed to be arrested by compression with bandages, and by the figure-of-8 suture, it was stopped by crowding little balls of lint into the orifice of the incision. This was followed by a little abscess, which discharged May 12th, to the considerable relief of patient.

May 14th. Removed bandage from foot, and found union complete and motion free. Uniting medium smaller than tendon above and below, and smallest midway between divided extremities.

May 19th. Thigh being held in abduction and extension, I divided the sartorius and rectus femoris muscles, passing a tenotome, slightly convex on its edge, under the skin just behind and below the anterior superior spinous process of ilium, and sliding it about parallel with Poupart's ligament (so as to keep the probable parallel of recurrent arteries) till it had passed inner border of rectus, and then cutting downwards till tension was divided. On removing the knife, a little bridle was seen on inner border of rectus, and this was divided by passing in the knife a second time. The divided ends of the muscles parted to distance of two or three inches. There was some bleeding,

and I did up the hip in compresses and a snug bandage. Patient complained of considerable twitching and pain after the operation, and said that his thigh "had gone to sleep," and that "it didn't hurt him any if he pinched it."

May 20th. He was reported to have "slept better the last night than any night since division of tendo-Achillis." Twitching continued to some extent in muscles of thigh, and patient could not bear to have limb extended, and felt easier when the knee was held steady. His pulse was 100. His appetite good.

May 21st. Commenced extension of thigh and leg by same simple means as those before mentioned. This caused patient a great deal of uneasiness, and he continually worked himself out of the posture I endeavored to confine him in. If I extended the thigh, the pelvis was raised, and patient would ask to sit up. Curvature of the spine would also become a good deal pronounced, being a large sigmoid curvature with greatest convexity to the right. Attempts at extension were continued by these and other means without success, till June 4th.

There had been considerable soreness in the region of the last operation, and the extension had been very incomplete. There was now considerable twitching of muscles of thigh again—this having subsided after the operation. I laid the patient on his belly, and the left thigh and leg were as well extended as the right, though considerably shorter, and the vertebral column in the lumbar region fell inwards a good deal. In standing, this region was a good deal curved outwards, and thigh lifted as before.

I now began to suspect a contraction of the psoas and iliac muscles, which the amount of elevation of the thigh ought to have led me to look to before. The present soreness of the parts precluded an examination; but I had felt an ill-defined contraction inside of the rectus before the last operation. Patient was directed to lie on his belly, and he kept this posture most of the time from June 4th to June 16th, and with gradual amendment, being able at any time after a long continuance in the posture to turn over on his back and bring thigh down for a moment or two. The exertion brought up the vertebræ in the lumbar region, however, making a great curve there anteriorly, and soon fatigued patient.

As the soreness in the groin diminished, some tension could readily be found just inside of rectus muscle. The femoral artery could be felt only with great difficulty, though with much less when the thigh was strongly flexed, than when it was extended. When pa-

tient was lying on his back, and the thigh was suddenly extended, he would be brought immediately into a sitting posture, and complain of straining high up in his groin. When the lumbar vertebræ were pressed inwards with force, a sensation was communicated to upper part of thigh, and the elevation of this was diminished. These circumstances, together with the ready extension of the thigh when patient was on his belly, and back curved inwards, made me look to the psoas and iliac muscles as the remaining cause of the deformity; and the fact that all the other means of flexion of the thigh upon the pelvis had been removed, put this cause beyond a question.

The subcutaneous division of the tendon of the psoas and iliac muscles must be an operation of considerable delicacy and danger. The relations of the tendon with the femoral and profunda arteries and the anterior crural nerve, are important. M. Guerin puts this tendon in the catalogue of those divided by him, but without any details that we know of, of the occasion, the method, or the result; and no other operator to our knowledge had attempted it. But the femoral and profunda, although usually on the immediate border of the tendon, or perhaps overlapped by it, might be avoided. Indeed, the probability was, that as the muscles were contracted, the tendon was lifted up, or perhaps by the action of the iliacus drawn a little to one side. The recurrent muscular branch, though perhaps of considerable size, might be avoided; or if cut, might be compressed. The nerve must of course be divided.

The operation could leave the patient in no worse state than his present; and if successful, promised great results. Even if the femoral artery should be cut and have to be tied, the muscular tension might be removed at the same time, and the operation, at the worst, would be of a class with those performed even in our day, and by Dupuytren in torticollis, a deformity of infinitely less importance.

I consulted with my friend, Dr. Green, a surgeon of ability and great experience, and he agreed with me in the practicability of the operation; and after having conferred with the patient's father, I undertook it on the 19th of June, in presence of Dr. Green, Dr. Heywood, and Mr. B. F. Heywood.

Passed in a pointed tenotome from outside of thigh, about an inch and a half below anterior superior spinous process of ilium, and slid it under the skin, in a direction parallel with Poupart's ligament, for the space of about three inches. Withdrew this and followed with probe-pointed tenotome; but I was in the field of last operation, and could not get through the close knit cellular tissue far enough. I had endeavored

to operate here so as to avoid the profunda and the recurrent arteries. Withdrew the knife, and commenced in same way about an inch and a half below, and a little in front of last aperture. I kept my left thumb nail hard upon the edge of the femoral artery, a position which I had obtained for it while the thigh was in a state of flexion, and passed the knives in succession quite up to this nail. As the probe-pointed one reached it, I turned it so as to cut downwards, and Dr. Green made efforts in the way of extension. I trusted to the curve described by the blade as I turned it on the axis at the junction of the blade with the handle, for a progressive removal of the knife from the femoral artery. The section required considerable force, but the tension yielded after several cracks, at each of which Dr Green said that he felt the limb give considerably, except at the last, which brought the blade hard on to the bone, and was followed, on withdrawal of the knife, with a very large jet of blood, such as to quite bespatter the operator from head to foot. Thick compresses were bound down over the incision, and a roller laid over the femoral artery and in its course, and confined by a firm bandage. Patient said that whole limb felt dead quite down to foot. A few hours after, when he had got over the fright from the operation, he said, "how queerly it felt in my back when you cut the cord; it was all loose there, and now it goes right back." His thigh, too, he said, felt all free. He was in considerable pain during day, but remained very quiet. There was bleeding enough to just show itself through the bandages. He slept considerably at intervals during night, complaining of pain only in his knee, which was relieved when the knee was a little squeezed by the hand. He took, during day, three or four pills consisting of extract of conium gr. iiss.; extract dandelion, gr. j.; and during night 3 ij. paregoric, and drank of a solution of super-tartrate of potass.

June 20th. Patient remains in about same state—pale, with very frequent and feeble pulse, without appetite, with considerable thirst, complaining somewhat of pain about left groin, but especially of pain in knee. No hemorrhage.

Take of pills of conium and extract of dandelion, pro re nata.

June 21st and 22d. Patient remaining about the same, I removed on 22d, a part of the dressings, and finding that there had been no bleeding, applied fresh ones. Patient's posture, since operation, has been on his back, with pillows under knee so as to flex thigh and leg a little, and keep them steady.

June 23d. A little return of appetite. Removed the dressings

and found that there had been no external hemorrhage, but there was a very considerable livid turgescence, as from subcutaneous bleeding, extending from superior spine of ilium down along by tensor vaginæ femoris muscle. Also about the femoral artery there was a little cylindrical swelling. But this was very small compared with the other, and there was no hemorrhage on inside of thigh. Lividity extended a little on to lower part of abdomen, and on to penis and scrotum, reaching median line in each. There was some vesication over Poupart's ligament.

June 24th. About the same. No dejection since operation. (Even.) A small dejection this evening.

Take Rochelle powder in morning.

June 25th. Rochelle powder operated sufficiently. Removed dressings and found parts as before; but vesication considerably extended.

June 26th. About the same. Appetite increasing. On removing dressings, found an eschar forming over coagulum near Poupart's ligament, and about on line of inner edge of rectus. The coagulum became exposed on the 28th, and I removed a part of it daily with the scissors.

July 2d. Began extension of thigh as after division of rectus. Patient fretted a good deal under this at first, and, disturbing coagulum, excited a little fresh hemorrhage. This continued, patient always chafing, and becoming daily paler and weaker till July 7th, when I removed all the coagulum and dressed the ulcer (which was in course of sartorius muscle, and two inches long on its superior face, one inch broad in its greatest breadth, and one inch deep in its greatest depth, and of a slate-colored and torpid aspect, with thick, rounded and indurated edges) snugly with lint, sticking plaster and a roller. Patient now complained scarcely at all of confinement, which had been of about eight hours duration since 2d, and the limb fell when unconfined to about same length as the other, and required scarcely the smallest force to make it quite as long.

July 8th. Curvature in spine is diminished since operation—patient himself feeling that he can sit straighter than before. When he is laid straight on his back and left unconfined, his chest is soon drawn over to the left side by a series of convulsive twitchings, that he cannot control—and the abdominal and ilio-costal muscles are seen and felt to be contracted. This drawing is painful to him, and he asks to be brought straight, and held so.

July 14th. Posture of thigh satisfactory. Ulcer granulating well,

under use of creosote ointment. Adapted a padded vest to patient, to be used in conjunction with other simple apparatus, to extend abdominal and dorsal muscles on left side of median line, the vest being only a means of traction by springs attached to it, and to be tied to corresponding strings on right side of board that supported mattress. This harness answered the purpose intended—putting those muscles on the stretch to such an extent as at first to compress left chest and interfere with respiration. With use of this I combined that of a course of manipulations, placing patient's nates on edge of bed, and forcing extension of thigh by repeated motions through a gradually increased arc; and placing right side of pelvis on edge of bed, and swaying limbs up and down in similar manner. This last motion put iliocostal muscles and the obliquus externus abdominis on the stretch to such an extent, that many little bellies were rendered prominent. The rectus abdominis of left side was contracted also. (To have divided all of these, if such an operation could be thought of, would have been to have cut from linea alba to spine.) In conjunction with the manipulations, I made use of strong antimonial ointment (one part antimony to three parts lard), rubbing it in over the muscles contracted till an eruption was produced, and then rubbing in extract of belladonna, and applying this also as a plaster. As the eruption began to dry up, I combined antimony with the extract of belladonna (in proportion of one part antimony to three of extract), and used this continually. The effect of all this was very obvious—diminishing tension to patient's sensation and my own daily; so that on 22d he could stand on both feet for a moment or two, with both flat on the floor, and body considerably more erect. He complained of weakness, however, in the groin and in the knee.

From this time till 23d of August, the treatment consisted mostly of manipulations as described. The patient improved under them rapidly; and early in August could walk across the room without assistance from a cane—planting both feet flat upon the floor, and keeping body in a posture a good deal more erect than that he had been used to.

I now advised that he should return home, to have the same system carried out under his father's roof.

I heard from him in November, that he "had improved a good deal since his return;" and in December his father expressed himself highly gratified with the success of the treatment. During winter patient has been making himself useful in his father's store, and is at present attending school.

The foregoing is an abridged history of a case that presents some features of unusual interest. The origin of the deformities in a disease that was clearly of the cerebro-spinal axis, their existence in a subject whose temperament was of the kind called nervous, and strongly marked, and their aggravation under moral or nervous* excitement, are circumstances of considerable apparent etiological importance. M. Guerin deduces his theory of the primary cause of deformities, produced by muscular contraction, in disturbance of the nervous centres, by collating a large series of cases, presenting material alterations of the brain or spinal marrow, with another series in which there had been manifest disease of the brain or spine, and showing the same results in each. It is rarely, in our observation, that a single case presents so many elements of this analogical argument as that before us.

The convulsive twitchings, sometimes even of a painful nature, that existed in this case, and the immediate relief afforded them on section of the muscles concerned, are circumstances which we have not seen noted before.

ART. VII.—*Report of the Surgical Cases and Operations that occurred in the Massachusetts General Hospital, from Nov. 1, 1840, to March 1, 1841.* By GEORGE HAYWARD, M.D.,* one of the Surgeons to the Hospital.

PATIENTS.			
Remaining in hospital, Nov. 1, 1840,	19	Discharged well,	26
		much relieved,	26
		relieved,	7
		not relieved,	4
		transferred,	2
		not treated,	2
		dead,	3
			<hr/> 70
Admitted between Nov. 1, 1840, and March 1, 1841,	69	Remaining in hospital, March 1, 1841,	18
Total,	<hr/> 88	Total,	<hr/> 88

* This is quite common in cases of strabismus, and the more obvious from the mobility of the organ concerned. There was presented to me, only a few days since, a little girl who usually maintained a parallelism of the eyes, but had a strong strabismus of the left eye under excitement.

DISEASES.

Anchylosis of the toe,	1	Loss of toes of right foot,	1
Abscess in ear,	1	Necrosis of femur,	1
“ over hip joint,	1	“ clavicle,	1
Burn,	2	Paronychia,	1
Bursa of patella enlarged,	1	Rigidity of muscles,	1
Carcinoma labii,	1	Scirrhus of breast,	1
“ nymphæ,	1	Scrof. excres. on nose and lip,	1
Caries of elbow joint,	2	“ ulceration of hand, with	
Club-foot, varus both feet,	3	contraction of fingers,	1
“ “ one foot,	3	“ enlargement of testicle,	1
“ pes equinus,	1	Sore toe (from injury),	1
Contraction of ham-string tendons,	1	Spine, outward curvature of,	1
Disease of hip,	1	“ outward curvature of, with	
“ “ with disloca. on dor-		paral. of lower extrem.	1
sum ilii,	1	“ tenderness of,	1
“ of foot,	1	“ disease of,	1
“ of eye, (iritis)	1	Sprain of back,	1
Dislocation of the femur,	1	“ hand,	3
“ shoulder, with frac-		Stricture of œsophagus,	1
ture,	1	“ rectum,	1
Fracture of tibia,	1	Tumor (hydatid) on inside of	
“ “ with paralysis of		knee,	1
lower extremity,	1	“ (steatomatous) on arm,	1
“ femur,	2	“ “ right lumbar	
“ “ with laceration		region,	1
of scalp,	1	“ (scirrhus) right breast,	1
“ of tibia and fibula,	2	“ (encysted) on neck,	1
“ “ of both legs, (com-		“ “ above clavicle,	1
pound)	1	Ulcer (simple), on leg,	4
“ of fibula (compound),	1	“ “ stump,	1
“ of patella,	1	“ (irritable) leg,	1
Fungoid disease of breast,	1	“ (varicose) “	3
Hydrocele, both sides,	1	“ (sloughing) “	1
“ one side,	2	Wounds, on scalp,	1
Injury of hip joint (by fall),	1	“ “ and face,	1
“ bones of foot,	1	“ head, face and hands,	1
“ middle finger, r. hand,	1	“ throat,	1
“ right knee,	1	“ arm (gun shot),	1
“ head,	1	Wry neck,	1
“ “ (by fall from church)	1		
“ great toe,	1		
“ eye,	1		
		Total,	88

Erysipelas.—It will be perceived by the foregoing table, that during the period embraced in it, no case of erysipelas occurred in the hospital. This was the more worthy of notice, as in some former years this disease had been very prevalent there at this season of the year, and as there were several accidents in the house during the winter of 1840–41, such as severe lacerations of the scalp, in which it is so apt to come on.

In a surgical report published in the Boston Medical and Surgical Journal in October, 1838, I stated, that prior to the autumn of 1837, there had probably not been a year in the twelve preceding ones, in which there had not been one or more fatal cases of erysipelas in the hospital; that at that time a change had been made in the mode of ventilating the wards, and from the time of that change up to the period of the publication of the report, the disease had in no instance been fatal, but had assumed a less malignant character than formerly. It gives me great pleasure to add, that since that time there has not been a single death from erysipelas in the hospital, nor has the disease been more frequent or severe there, than what it might be expected to be under similar circumstances in private practice.*

Though this fact throws no additional light on the *cause* of erysipelas, it must be conceded that it shows strongly the advantage of ventilation, by means of which the wards are supplied with pure air in place of that which has become foul and noxious by exhalations from the patients, or from any other cause.

It may not be amiss to add, that the exemption from erysipelas which the hospital has enjoyed for the last four years, cannot be attributed to the fact that the disease has been less prevalent or in a milder form in this vicinity during that period than formerly; for by referring to the bills of mortality of the city, it will be seen that there were more deaths in Boston from erysipelas during these four years, than in any other equal space of time of which there is any record. In fact, it appears, that from the year 1811 to the year 1836 inclusive, a period of 26 years, there were but 46 deaths from erysipelas; while in the four years from 1837 to 1840 inclusive, there were no less than 40 deaths from this disease, and not one of these occurred in the hospital.

In noticing, in my former report, the treatment of erysipelas, I

* The above was written more than a year since, and I am happy to have it in my power to say, that there has been no fatal or severe case of erysipelas in the hospital from that time to the present, April, 1842.

spoke of bleeding by leeches as both safe and useful, and I have since had no occasion to alter this opinion. The leeches should be applied on the sound skin in the immediate neighborhood of the disease; and when thus applied they often seem to mitigate its violence, without in a single instance, to my knowledge, causing any serious inconvenience.

I advert to this subject now, because Mr. Liston, in his *Elements of Surgery*, says, "bleeding by leeches is not admissible, for the leech bites prove a source of irritation, and are liable to suppurate; erysipelas has been often produced by leeching." This, to be sure, is high authority; at the same time I must be allowed to say, that having used them freely in this disease for more than fifteen years without such effects, I shall continue the practice until something occurs to convince me that I am in an error. Notwithstanding the strong terms of commendation in which he speaks of free incisions, it cannot be denied, that though in some cases they may be resorted to without danger and with great benefit, they are not adapted to all, and are occasionally unsafe. It is well known that the hemorrhage from them in some cases has been excessive, and in others fatal; and there is no one probably who would employ them in erysipelas of the head and face, where leeches are often used to the utmost advantage. It is not denied that inflammation often follows the application of leeches, but it is by no means certain that it is of an erysipelatous character. It resembles that which frequently arises in consequence of a blister, and like it passes off spontaneously in a few days.

Deaths.—There were but three deaths in the surgical department of the hospital, from Nov. 1, 1840, to March 1, 1841. Two of these were in consequence of severe burns; one of the patients died in a few hours after her admission, and within six and thirty hours from the accident; and the other lingered several weeks, and at length sunk from that continued irritation, which so often arises from extensive suppurating surfaces. The other fatal case was that of a young female, who entered the hospital with scrofulous abscesses about the hips, nates and loins, and at length died with tuberculous disease of the lungs and mesentery.

Burns.—There is some difference of opinion among surgeons as to what should be first applied to the injured surface in cases of burns. This difference arises probably in part from the fact that the same application would not be proper in every instance; at the same time it must be acknowledged that different and almost opposite views

have been entertained on this point by intelligent practitioners. When the injury has been sufficiently severe to disorganize the skin, either with or without destroying any of the subjacent parts, the local application that is first used, can be of but little consequence, as the vitality and consequently the sensibility of the part is destroyed ; our principal object is then, to support the system, which usually, under such circumstances, receives a severe shock, especially if the burn be extensive. In doing this, however, we should rely chiefly on mild means, as there is great danger of excessive reaction. Our topical applications in such cases can only be useful when the dead and disorganized parts have been separated from the living. But in less severe cases, where the vitality of the skin is not destroyed, the pain is intense, and much may be done to lessen the sufferings by proper local means. In slight burns, cold, in some of its forms, is perfectly safe, and the most comfortable application to the patient. When the injury is on the extremities, this may be applied in the form of iced water, by means of cloths dipped in it and frequently changed, or ice itself. In using the latter, however, care should be taken not to continue it too long at a time, lest the skin should be frozen, and painful and troublesome sloughing be the consequence. But when the burn is over the thorax or abdomen, neither of these applications would, perhaps, be perfectly safe ; and if the skin be unbroken, cloths wet in diluted alcohol and applied to it would be much better. This latter remedy is nearly as comfortable to the patient, and has a greater power than the others of preventing the vesications from being as extensive as they otherwise would be. But in large burns, especially if the skin be broken, equal parts of olive oil and lime water will be found among the most soothing means that can be used. When these articles are not at hand, soap suds is a very good substitute ; it requires, however, to be removed frequently, and the frothy part only should be applied.

Great relief is often afforded by discharging the contents of the vesicles, especially when they are large. But this should be done by making punctures in the sound skin at a little distance from them ; it is important to leave the cuticle whole, as it forms the best protection for the inflamed and tender parts beneath.

When there is an extensive suppurating surface from burns, it is desirable to avoid frequent dressings, which usually give the patient extreme pain. It has been proposed to sprinkle the parts, in such cases, with scorched flour, and to repeat this as often as may be

necessary to absorb all the fluids which are effused. In this way a crust is formed over the tender and denuded parts, which completely protects them from the air, and thus essentially lessens the sufferings of the patient. It is said by some, that this crust may be allowed to remain till the parts beneath have entirely healed. In the few cases in which I have employed these means, I have been pleased with the result.

Some notion may be formed of the pain which is sometimes caused by dressing a burnt surface, by the following fact. Several years ago I saw an individual who was so severely burned that it became necessary to amputate one of the arms; the patient afterwards told me that the pain of the operation was not equal to that of a single dressing.

In some cases of obstinate ulcers following burns, I have found an application of creosote very useful; diminishing their irritability and rendering them more inclined to heal. Eight drops of creosote mixed with an ounce of mucilage of gum Arabic, or with an ounce of stramonium or marsh mallows ointment, are the forms in which I have usually employed it.

It must be confessed, however, that these ulcers will be often found very unmanageable under any course; the action of caloric seems to have produced such an effect on the part, that it with difficulty takes on the restorative process.

Bursa over the Patella, enlargement of.—There was one case of this kind in the hospital when I entered on my duties. The patient, however, was nearly well. The tumor was punctured by Dr. Warren soon after the patient entered, and when the sac began to fill up, which it did in a few days, it was laid open by a free incision; this brought on the requisite degree of inflammation; the wound healed kindly, and the whole difficulty was removed.

This enlargement of the bursa over the patella is by no means unfrequent. I have seen more cases of it in females than in males. It sometimes comes on spontaneously; at others, it is the effect of an injury, not showing itself, however, till some days after the injury has been received, and is then discovered at first usually by accident; and again it is thought to arise very often in consequence of pressure. Hence it is frequently called in England the housemaid's knee.

When it is the seat of active inflammation, as it sometimes is, red, hot and painful, it should be treated by leeches and cold applications, and these are frequently sufficient to remove it. But ordinarily it is not

inflamed. It is a simple, colorless swelling, without pain, and is inconvenient only from its size and situation ; though the patient often imagines that the limb of that side is not as strong as the other. It is certainly desirable to remove it, because it will continue to increase in size, and occasionally I have known it to take on a low degree of inflammation, which terminated in ulceration, leaving an irritable sore that was very difficult to heal.

A very simple, and in most cases I have found it an effectual mode of treating these enlarged bursæ, is to puncture them so as to drain off all the contents, and then apply a blister, keeping it open for ten or twelve days, by means of savin cerate, or some other irritating application. But when the swelling has existed for a long time, so that the cyst has become much thickened, and its contents changed in character and consistence, this method will not always succeed. In such cases the tumor should be punctured, and if it fills again, as it usually does, it should be laid open by a free incision. It may be necessary to insert a piece of lint between the lips of the wound to bring on the proper degree of inflammation ; should this, however, be excessive, a poultice should be applied. I have never seen a case where it was requisite to remove the sac, though it is said that occasionally a cure cannot be effected without it.

This is a difficulty that cannot be safely tampered with ; it is best, I believe, in all cases to puncture it in the first instance, though this alone is rarely sufficient to effect a cure. But if more powerful means are adopted at once, a degree of inflammation will sometimes come on, extending, perhaps, up the whole limb, with such severe constitutional symptoms as to render it troublesome, if not alarming. Nothing serious is to be apprehended from a simple puncture.

Some years since I introduced a small seton, consisting of two or three threads only, through an enlarged bursa over the patella, and though a cure was effected by it, the inflammation was so great that I have never been tempted to repeat the practice.

Contraction of the Ham-string Tendons.—A healthy girl, 13 years of age, was admitted into the hospital in September, 1840, in consequence of a congenital contraction of these tendons. It was stated, that at her birth, her limbs were drawn up in contact with her back ; but by the persevering use of various mechanical contrivances, they were so much brought down that at the age of seven years she could walk on her knees, her heels being in contact with the nates. Some farther improvement was made by the use of different appa-

tus, so that at the time of her admission she could bring the toes of one foot to the ground, though not those of the other, and with the aid of a pair of crutches she could get about on a level surface, but was obliged to go up stairs on her knees ; and it was apparent that this was her easier and more usual mode of walking, for the knees were now covered with two thick, fleshy cushions. Both legs were much bent at the knee, and any attempt to extend them gave her great pain. The principal resistance seemed to be from the firm contraction of the ham-string tendons. On the 14th of October the outer ham-string tendon of one leg was divided in the usual subcutaneous method by Dr. Warren ; this gave but little pain at the time, and no inconvenience ensuing, all the ham-string tendons of the other leg were divided on the 20th, and on the 23th the two internal ham-strings of the leg first operated on were divided. The apparatus for extension was not applied in any instance till the wound in the integument had healed, and the patient suffered but little from the use of it. The limbs slowly but gradually came down, so that by the 18th of November, the best limb was nearly straight, and she could bring the sole of the foot to the floor, bearing the greater part of the weight of the body on it without causing much pain. She was discharged on the 18th of January, a little more than three months after the first operation, "much relieved." Her sufferings had been slight during her treatment, and her general health was unimpaired. At the time she went out, the sole of one foot was fairly brought down, and she touched the floor with the toes of the other when she walked, so that with the aid of crutches she was able to get about on her feet with comparative ease. There can be but little doubt, that with proper attention on her part, a much greater degree of improvement will take place.

It should also be stated that this was by no means a favorable case. There was some mal-formation about the knees, and the insertion of the tendons was much broader than is usually met with. Yet notwithstanding, she gained more in three months by the operations, than she had in the preceding thirteen years. I say by the operations, because the apparatus that was applied was of the simplest kind, and because far more complicated and powerful machinery had been used before her admission to the hospital, with comparatively slight benefit.

There have been two other patients on whom this operation has been performed in the hospital, with a very good degree of success.

One of these was a little girl 11 years of age. She entered in May, 1840. Five years before her admission, she received a blow on her right knee, which was followed by severe inflammation; she was under treatment for a year, and then partially recovered, the knee being bent, the patella fixed and the ham-string tendons tense. At the time of her admission, she could not touch the toes of the affected limb to the floor while erect.

On the 30th of May, I divided the tendons of the biceps femoris, the semi-membranosus and semi-tendinosus. So much inflammation followed, that extension was not applied till the 15th of June. This was continued, together with friction, the warm spout bath and passive motion daily, with gradual improvement till July 4th, when after free exercise, considerable inflammation occurred in the whole joint. This yielded to warm fomentations, &c., in five days, and the extension was then re-applied. On the 22d, she could place her foot fairly down on the floor, while standing in an erect posture, and bear most of her weight upon it. She was then discharged at the request of her friends, who were desirous that she should return to her home, which was some distance from the city. At the time she left the hospital she could walk with tolerable ease; and though the patella was still fixed, the motion of the joint was somewhat improved.

The improvement in this case was rapid and very great; and when it is recollected for how short time the extension was applied, it must be attributed principally to the division of the tendons.

Disease of the Hip.—There is certainly no one method of treatment that is adapted to all cases of this formidable disease. If the exact seat of the morbid affection was known in each instance, there would be less difficulty in deciding on the proper curative course. But few surgeons of the present day will probably agree with Mr. Ford in the opinion, that in most cases the disease begins in the articular cartilages; though it cannot be doubted that these may, in some instances, be the first that are attacked by the morbid affection, it will, I think, be also admitted, that it occasionally begins in the synovial membrane and the bones themselves. It would be difficult to explain the variety of symptoms that appear in different cases on any other supposition.

In children under puberty, I have thought that the disease began most often in the synovial membrane or the bones, while at a later period of life the articular cartilages were more frequently the first attacked.

There is one circumstance which has attracted less attention than might have been expected, when we consider its importance, and that is the occasional displacement of the head of the thigh-bone from its articulating surface, without the formation of an abscess. I have seen several cases of this kind ; in most of them, there were severe local and constitutional symptoms before the head of the bone was pushed out of the socket ; when this took place these gradually subsided, and the patients ultimately recovered with limbs more or less shortened. In these cases there was no secretion of pus that was apparent, and no ulceration of the surface ; the dislocation seemed to have been effected by some morbid deposit made in the joint. The shortening is generally from two to three inches, and if such patients are allowed to bear any weight on the limb as soon as the pain and tenderness pass off, it will be still greater. Not only absolute rest is important at such times, but extension should be made as soon as it can be borne, and kept up steadily till a new socket is formed, or the joint becomes ankylosed. The time required to accomplish this is different in different cases, but many months will be necessary under the most favorable circumstances. Under this course I have seen a limb that was three inches shorter than the other brought down, so that there was no apparent difference in the length, with a hardly perceptible change in the appearance, and but a very slight degree of lameness in walking. This was done, too, without subjecting the patient to any suffering.

A case of this kind was admitted into the hospital early in February, 1841. The patient was a child of eight years of age, of a feeble habit of body. Five months before his admission he had had typhoid fever, by which he had been very much reduced, and had not, when he entered the hospital, recovered his flesh and strength. Five weeks before his entrance, it was discovered that the left limb was shorter than the other, that the nates on that side were broader, and that the foot turned inwards.

At the time he came to the hospital, the affected limb was three inches shorter than the other, and the head of the thigh bone could be distinctly felt on the dorsum of the ilium. One of the most remarkable circumstances about this case was, that there was no local pain, either before or subsequent to the dislocation of the bone.

Extension in various forms was applied and steadily kept up till the 1st of June following, when he was discharged "much relieved." He not only did not suffer during his treatment, but on the contrary

gained in health and strength, and was much more comfortable when the extension was kept up than when it was suspended. At the time of his discharge, his limb was only one inch and a quarter shorter than the other, he could walk with some degree of freedom and ease, and there was much less lameness than could reasonably have been expected.

In the *treatment* of hip disease, it seems to be conceded at the present day, that entire rest is of the utmost importance till the whole morbid process has ceased. In the acute cases that are sometimes met with, accompanied with pain and tenderness, the patient has no disposition to move the limb, but it is essential, if we intend to prevent a great degree of lameness and deformity, that the head of the bone should be kept quiet in its socket without the slightest motion, after the active symptoms have passed off; and it is equally important, too, in those cases in which a morbid degeneration goes on in the joint without causing suffering or giving any signs of inflammation. Without rest no other means can avail, and when this is strictly enforced, hardly any other local ones will be required. In young subjects especially, counter irritation in all its forms, by blisters, setons, issues and actual cautery, may in most cases be advantageously dispensed with. The occasional use of leeches, where there is much pain, will be found useful; two or three at a time, applied at intervals of three or four days, are usually sufficient. But it is not prudent to continue the use of them for a great length of time, as they are not required after the pain subsides, or after there is evidence that the suppurative process has commenced.

In the hip disease of patients beyond the age of puberty, however, some form of counter-irritation is occasionally useful, and issues are perhaps on the whole preferable, as they seem to exert a more decided control over the morbid action, than any of the other irritating applications, and to produce a less injurious effect on the system of the patient.

A hollow splint, extending from the nates to the foot, has appeared to me to be the best mode of confining the limb. It can be made comfortable to the patient by means of cotton wadding, and is easily kept in place by a roller. It has the advantage over the stiff bandage recommended by Mr. Liston, that the limb can be examined from time to time without moving it, and consequently without giving pain. It is important in many cases that the limb should be often examined, especially if an abscess be forming.

The extended position of the limb is not only the most comfortable to the patient, but is oftentimes the only means of preventing the bending of the knee, which occurs in so many cases in hip disease, and which frequently proves so obstinate and unmanageable.

The apprehension that is so often expressed by friends, that the confinement of the limb will prove injurious to the health of the patient, is altogether groundless ; on the contrary, the relief that is usually obtained by the extended position is so great, that the general health is almost uniformly improved by it. This course should be continued till the disease has passed off; and in those cases in which an abscess has formed and the head of the bone is dislocated, the continuance of the splint is of the utmost importance, for it prevents the great degree of shortening that would otherwise take place. Attention to diet and the state of the bowels seem to be the only other means that are required.

Dislocation of the Femur.—A healthy laborer, 45 years of age, was admitted into the hospital at 10 o'clock on the morning of the 31st of December, 1840, in consequence of an injury of the right thigh, which he received two hours before, by the fall of a bank of earth. At the time of his admission, he was in great pain in the injured limb, with a pale countenance and feeble pulse. When standing up, he stooped forward ; nates of the right side rounded, knee flexed, and the limb something more than an inch shorter than the other. There was great difficulty in abducting or rotating the limb, and severe pain and faintness were induced by the attempt. At 12 o'clock he was carried into the operating room and placed on the table, having previously taken one grain of tartarized antimony in solution. About eight ounces of blood were taken from the arm, and another grain of antimony given, but neither fainting nor nausea were induced. Counter-extension being made by a strap well padded passed between the thighs and held by three assistants, extension was made obliquely over the left leg and the knee gradually abducted ; the head of the thigh bone came out of the ischiatic notch with an audible start, and seemed to be above and posterior to the acetabulum, from which position it could not be drawn by manual force.

The pulleys were then applied, and while the limb was gradually extended in the same direction as before, the head of the femur was seen and distinctly heard to go into the socket. The thigh could now be moved easily, though with pain to the patient, in any direc-

tion. A roller was passed around his pelvis, and he was carried to his bed. The pain left him almost immediately after the reduction of the bone; the soreness soon subsided, he walked across the room with a slight limping in four days, and in eight days he walked without any lameness, and was discharged "well."

This is a case of that dislocation of the hip, which Sir Astley Cooper says is "the most difficult to detect and reduce; to detect, because the length of the limb differs but little, and its position is not so much changed as regards the knee and foot, as in the dislocation upwards; to reduce, because the head of the bone is placed deep behind the acetabulum, and it therefore requires to be lifted over its edge, as well as to be drawn towards its socket."

The reduction in this instance, however, was easily accomplished. This was owing partly, I think, to the direction in which the force was applied, and more, no doubt, because the attempt was made so soon after the accident, before the muscles had become firmly contracted.

The immense advantage of the compound pulleys in all dislocations in which any considerable degree of extending force is required, can only be doubted by those who have not witnessed their application. They give much less suffering to the patient than is caused by manual extension, and they enable the surgeon to apply the force with ease, to continue it without relaxation, and to extend it gradually as far as may be necessary. Manual force cannot be applied so steadily; it is often made by jerks, and as the assistants become weary, as they soon do, the muscles contract with great force, so that renewed and violent efforts are necessary to carry the head of the bone into its socket.

Fractures.—There were ten cases of fracture in the hospital during the period embraced in this report. Three of these were fractures of the thigh bone, six of the bones below the knee, and one of the patella. The course pursued there in the treatment of fractures of the shaft of the thigh bone below the middle, has been to apply the modified apparatus of Desault—in other words, to make use of extension and counter extension. This has in most cases succeeded admirably well. The patients have suffered but little while under treatment, and have usually recovered with scarcely any perceptible lameness or deformity.

The advantages of the extended position of the limb in a majority of cases of fracture of the thigh are now admitted by the best surgeons of Great Britain, though this method was opposed not many

years since by some of the most distinguished professional writers of that country. Experience has taught them that the objections made to it were not well founded, and that the ill consequences that sometimes arose from its adoption were too often the result of the carelessness and neglect of the attendant.

The starch bandage, or immovable apparatus, as it is called, is no doubt a valuable improvement in the treatment of fractures. In many cases where the bones of the lower extremity are broken, it does away with the necessity of confining the patient to his bed, by affording a steady, uniform and firm support to the limb, and thus preventing, in a great measure, the danger of displacing the fractured ends of the bone. He can by this means move about with the aid of canes or crutches, and bear some degree of weight on the injured leg, even before the provisional callus is formed. It will also be often found useful in fractures of the arm, enabling the patient to walk freely about his ordinary avocations, not requiring his confinement to the house for a single day.

In numerous cases it has been applied at the hospital with great advantage, nor am I aware that any bad effects have resulted from it there in a single instance. But it must be admitted that its injudicious application may be productive of the most disastrous consequences. By the undue pressure which is sometimes made by it, inflammation, ulceration and gangrene have followed, that have cost the patient his limb, if not his life.

I should not regard it safe to apply a starch bandage immediately after the occurrence of a fracture, if the limb were swollen at the time, or if there was reason to believe, from the degree of injury, that swelling was likely to come on. The swelling in such cases may arise from the effusion that takes place, or from the inflammation that is the consequence of the violence that has been done to the parts. In either case, mechanical pressure cannot prevent it; and it is well known that the combined action of pressure and inflammation will cause a part to ulcerate, and if it be continued, sloughing will follow. It not unfrequently happens that a bone is broken without the occurrence of any swelling, the force which caused the accident having been applied at some distance from the fracture. In such cases a starch bandage can be early applied with safety; it is only necessary to wait a few hours, and if swelling has not then begun, longer delay will not be required.

It is not my purpose in these remarks to point out the various cir-

cumstances in which a starch bandage may be useful ; my sole object was to caution those who are not familiar with it, against its indiscriminate application.

Another recent improvement in the treatment of fractures, is the introduction of the cold water dressings. These are especially valuable in compound fractures, but they are also highly useful in all those cases of simple fractures in which there is any considerable degree of contusion, or injury of the soft parts. In former times, the great object in compound fractures, was to promote the sloughing and assist nature to separate the dead from the living parts. But surgeons at the present day adopt means to prevent the sloughing, and where this cannot be accomplished, to limit it as far as possible. The cold water dressings and local bleeding by leeches, are among the most powerful agents in effecting this. Instead, therefore, of applying hot fomentations and poultices in a case of compound fractures, cloths dipped in cold water, frequently renewed, are all the dressings that are now deemed requisite in the early stages. They have the advantages of allaying the inflammation far more than the old method, and they are at the same time much more comfortable to the patient. In several cases I have been satisfied that gangrene was prevented by the adoption of this course.

There was one case of fracture of the patella. The patient was 67 years of age, in tolerable health, though feeble. In coming down stairs he made a false step, and the fracture was the consequence of the violent contraction of the muscles. It was transverse, as it usually is when produced by muscular action. He was brought to the hospital sixteen hours after the accident ; the knee was much swollen, and very painful. His body and limb were put in such a position as to relax the muscles, and leeches and cold applications were applied to the joint. No apparatus was used till six days after the accident ; at that time the swelling and pain having in a great measure subsided, a very simple one was employed. The limb was first covered with a roller from the foot to the hip, and a hollow splint was then applied on the under side, extending from the nates to the heel. To this were attached two rollers, each two and a half yards long, six inches apart, one above and the other below, and these carried above and below the joint were sufficient, with the aid of compresses, to keep the fragments of the patella in apposition. Union took place in five weeks ; passive motion was then gradually given to the joint, so that in two weeks more he walked with ease, and could bend his

knee, and he was discharged "well." The bone was united here, as is usual in such cases, by ligament; but this was so short that there was no lameness or inconvenience. It is undoubtedly true that a ligamentary union in fractures of the patella, is better than that by bone, provided the ligament be short, as it is stronger and less liable to interfere with the motions of the joint. To effect union in these cases, a simple apparatus, with a proper position of the body and limb, seems to be all that is required; at any rate, it is more likely to be accomplished in this way than in any other. A starch bandage I should not regard as safe and proper in fractures of the patella; there is so much swelling for some days, that ulceration, if not sloughing, will probably follow its application, if it was made early, and either of these, in such a situation, would be of a very serious character.

Hydrocele.—The operation by incision is frequently performed at the hospital, for the radical cure of this disease. This is principally owing to the fact that many of the cases that come there are of long standing, upon which operations have been unsuccessfully performed before. It is no doubt true that if the method by injection always succeeded as well as it sometimes does, it would be preferable to all others. But it is not adapted to all cases; it not unfrequently fails, and sometimes the fluid used for the injection escapes into the cellular membrane of the scrotum, producing very troublesome and serious effects; and this has been said to happen when there was no want of care or skill on the part of the operator. The operation by incision is somewhat more severe than that by injection, and requires the confinement of the patient for at least three or four weeks; on the other hand, it is unattended with danger, and it is certain to effect a cure. The pain produced by it is not so much greater as that from the injection as is generally supposed; in some instances, patients who have undergone both operations, have assured me it was less.

Two or three years since I operated on a young man, and made use of the tincture of iodine for an injection, following the directions as to quantity, &c. laid down by the best writers on the subject. All the fluid passed into the tunica vaginalis; not a drop of it escaped into the cellular membrane. The pain was intense, not only as long as it remained there, but for several hours after. A great degree of swelling of the testicle followed, so as to confine the patient to his bed for several days, and to his room for some more. I consoled myself with the belief, that though the severity of the symptoms was great, a radical cure was certain. But it was not so; in a few

weeks the effusion again took place, and before long the scrotum was as full as before the operation. A few months after, I operated by incision, and a radical cure was the consequence. The patient assured me that he suffered much less from the second operation than he had from the first.

The same statement was made to me in February, 1842, by a patient on whom I operated at that time by incision. Some years before, the operation by injection had been performed by a surgeon in a neighboring city. In this case, the fluid used was port wine; it not only failed, but caused a great degree of suffering. This patient spoke of the second operation as trifling in the amount of suffering when compared with the first.

Neither of these operations is adapted to all cases of hydrocele. In those which have been before operated on without success, or in which the tunica vaginalis is much thickened, or there is reason to believe that the fluid is contained in cysts, there can, I think, be hardly a doubt that the operation by incision should be preferred. But in recent cases on which no operation has been performed, except, perhaps, that of puncturing, where the sac is but slightly if at all thickened, and where the disease is not complicated with any thing else, it would not be right to resort to it without having first tried the effects of injection.

Of the different fluids used for this purpose, as alcohol of various degrees of strength, solution of the sulphate of zinc, tincture of iodine and port wine, I prefer the latter. Three or four ounces of this undiluted, as recommended by Mr. Liston, I have found to answer very well.

Varicose Ulcers.—These ulcers, when situated on the leg, the usual seat of them, readily heal, if the limb be put in a proper position, and attention be given to the diet and the state of the bowels. But they are very apt to return when the patient resumes his ordinary pursuits and mode of life, unless something is done to remove the varicose state of the vein on which they are dependent. This can be effected radically only by obliterating its canal, and various means have been devised for this purpose. More than two thousand years ago the actual cautery was employed, and occasionally with success. But so severe and hazardous a remedy was not likely to get into general use, and it has long since been laid aside.

Sir Everard Home advised the operation of tying the vein, and stated that he had frequently done it with perfect safety and success.

But other practitioners were not equally fortunate ; severe and alarming inflammation came on in many cases, and death was the consequence of it in several. The ligature of the vein, therefore, soon fell into disuse, and other means were resorted to, to effect the same object. Among these were the division of the vein, either with or without a division of the ligaments above it ; more recently passing a needle under the vein, and applying the twisted suture and the application of the lapis infernalis, as recommended by Mr. Mayo. These two latter methods seem to have the preference at the present day, though upon what ground I am at a loss to conjecture, for their advocates admit that they require great caution in their use, and that alarming and fatal consequences sometimes follow.

The principal danger to be apprehended from all these operations, is inflammation of the vein, and it does not seem reasonable to suppose that a simple division of the vessel would be as likely to produce it, as tying it by means of a needle and a twisted suture, or the application of caustic. In all surgical operations of importance, veins are freely divided, and frequently, as in amputation of the thigh, those of a very large size ; and how rare it is that any trouble arises from this cause. Nor have I ever known any ill effects to follow, when it has been done for the cure of varicose veins ; and yet this is an operation which I have frequently seen performed and have frequently performed myself. The trouble, which has been said to arise from this cause, was probably owing to the fact that the operation was done at an improper time, when the vein was in an inflamed and morbid state. As a general rule, it is best to defer it till the ulcer has entirely healed, and all the symptoms of inflammation have passed off.

The method proposed by Sir Benjamin Brodie, of dividing the vessel without dividing the integuments above it, would, perhaps, be the best, if we could be certain that the whole circumference of the vein were in this way divided. But in those cases in which this operation becomes necessary, there has been so much previous inflammation of the vessel, that it often becomes closely connected with the surrounding parts, so that when we attempt to pass the knife under it, we may merely transfix it and make a partial instead of a complete division of the vessel. This would necessarily prevent the success of the operation, and could not be known unless the integuments above were divided. I cannot believe that their division enhances the danger in any considerable degree, especially as I have never seen any bad effects follow it.

In either method a compress should be placed upon the part where the division is made, a roller applied from the foot to the middle of the thigh, and the limb kept in a state of entire rest, in a horizontal position, till the wound has healed.

Within the last two or three years, the operations for varicose veins, by the needle and twisted suture and by caustic, have been several times performed at the hospital. The symptoms that followed were much less severe than I had anticipated; some of the patients hardly suffered at all, and in one case only was there any very serious inflammation. The vein was not, however, in every instance obliterated; how these operations would compare in this respect with that of division, I am unable to say, for I have not seen a sufficient number of cases to enable me to make a comparison that would be of any value. I should infer, *a priori*, that dividing the vein would more probably cause its obliteration than any of the other means; and with my present knowledge, I should regard it as more safe.

The following operations were performed; these were done by my colleagues, Drs. Warren and Townsend, and myself, it being the practice at the hospital for each of the surgeons to perform a part of the operations throughout the year.

Amputation of toes,	2
“ of finger,	1
Division of tendo-Achillis (club foot),	9
“ of sterno-cleido-mastoid muscle (wry neck),	1
Hydrocele by incision	3
Operation for varicose vein, by needles and twisted sutures,	1
Removal of scirrhus breast,	1
“ “ cancer of the lip,	1
“ “ encysted tumor from the neck,	1
“ “ malignant tumor from the neck,	1
“ “ steatomatous tumor from arm,	1
“ “ hydatid tumor from thigh,	1
“ “ a part of the clavicle, necrosed,	1
	<hr/> 24

The patients on whom these operations were performed all did well; they recovered from their effects so as to be able to leave the hospital; though it can hardly be doubted that in some of the cases, the disease, for which the operation was performed, would return.

The number of operations was quite as large as the average for the same period of time, but they were not in general of so important a character as those which have been frequently performed there in former years.

Boston, April 18th, 1842.

ART. VIII.—*Cases of Strangulated Hernia, with Remarks.* By
J. MASON WARREN, M.D.

CASE I. *Strangulated femoral hernia. Omentum forming a cyst containing the intestine. Large abscess within the abdomen.*

The subject of this case was a laborer, 40 years old. The hernia first made its appearance five years ago, and was discovered filling the scrotum after a hard day's work. The patient was able to return it himself with some little difficulty; he made no application, however, and wore no truss, and when the intestine was occasionally protruded and a little pinched, by quiet and abstinence he succeeded in replacing it without medical assistance. Two years since the hernia suddenly disappeared, and did not manifest itself again until the present time.

I was requested to see him by his physician, Dr. Brown, under the following circumstances. Forty-eight hours before, while raising a heavy load, the hernia was again suddenly forced out, and was immediately followed by severe pain in the abdomen. He made repeated efforts to reduce it, and the following day even attempted to resume his work, but fainted from pain and was taken home. He did not see his physician until the following morning, not apparently being aware of the dangerous nature of the disease. He was immediately bled, ice was applied to the hernial tumor, and all the ordinary means for the taxis resorted to. In the afternoon, the symptoms becoming aggravated, I was requested by Dr. Brown to perform the operation.

The tumor at this time was about the size of an orange, very tense and painful to the touch, and the scrotum, from the long-continued efforts of the patient by severe rubbing for its reduction, had become considerably inflamed. He complained of a severe dragging and almost insupportable pain in the abdomen.

I was assisted in the operation by Dr. Warren, Sen., Dr. Brown and Mr. B. Brown.

On opening the hernial sac a large mass of omentum presented, very red and swollen; this had an elastic feeling, as if it surrounded a mass of intestine.

The stricture, which was formed by the external abdominal ring, was extremely close, and it was with the utmost difficulty I was able to insinuate a director under its edge and divide its fibres. This being accomplished, the strangulated parts were a little loosened so as to allow me, after some examination, to insert the little finger into an aperture formed by a folding of the omentum, and discovered a knuckle of the intestine which was thus almost completely encysted. By a slight pressure this was easily returned into the abdomen. The reduction of the omentum was however a matter of more difficulty, and it was only after a farther dilatation of the stricture and by considerable management, that it was ultimately reduced. The omentum, though much swollen, was not at all indurated, and was otherwise quite healthy. He expressed himself immediately relieved on the completion of the operation.

The following morning he was free from pain in the bowels, which acted well after a dose of castor oil. There was a retention of urine, which required the use of the catheter. His pulse was a little accelerated.

On the third day I perceived a slight redness in the groin, and he complained of a deep-seated pain in the left iliac region. The pulse was quick, countenance anxious, and the tongue considerably coated. On the following day the redness had extended itself nearly half down the thigh and over a part of the abdomen of the same side. There was great pain at this point on pressure, but the abdomen generally was not over sensible, and presented no appearance of extended peritoneal inflammation. His bowels were freely evacuated by means of castor oil, and leeches were applied to the seat of pain, followed by a large poultice to promote the flow of blood and increase the capillary circulation. In the course of a few days an indistinct fluctuation could be distinguished, deep in the iliac region, which, finally, ten days after the operation, began to discharge itself through the external abdominal ring at the upper part of the wound made in the operation. So far as could be ascertained, about a quart of pus was contained in the abscess. The parietes gradually contracted, and the patient recovered without further difficulty.

The chief points of interest in this case are, 1st. The disappearance of a large hernial tumor, which for three years had been unrestrained by a truss, and its sudden return and immediate strangulation by the external ring, two years afterwards. 2d. The encysted state of the intestine, which was so completely concealed on the first opening of the sac, that it could not be exposed; and it was only after the protruded parts had been relieved by a free division of the stricture, that the omentum could be unfolded, and the intestine discovered through a small aperture at its posterior portion.

The most interesting feature of the case was the formation of the large abscess within the abdomen. No appearances were presented on the evacuation of this abscess through the abdominal ring, to justify the idea that any portion of the omentum had become gangrenous; the pus was well formed, and in all probability must have been derived from a suppuration of the prolapsed omentum, and which had been inflamed partly by the strangulation it had been subjected to, and partly from the long-continued and violent efforts of the patient to force it back into the abdomen.

CASE II.—*Scrotal Hernia. Division of the stricture and reduction of the hernia without opening the sac.*

This patient, a sailor, 30 years old, was admitted into the Massachusetts General Hospital under the care of Dr. Warren, Sen., on Sunday, the 10th of April. His history was as follows. He had been subject to a hernia in the right inguinal region for the last fifteen months, which had been partially kept up by means of a hernial bandage. Yesterday, while coming to Boston in the rail-road cars, the hernia suddenly made its escape from under the pad, which was immediately followed by severe pain. He made repeated efforts during the afternoon and the following night to return it into the abdomen, but these attempts seemed only to increase his sufferings. The next day he was brought to the hospital by Dr. Channing, and was seen by Dr. Warren.

The tumor, about the size of two fists, was quite tense, very painful to the touch, and the surface of the skin over its neck in the inguinal region, was much inflamed and excoriated, from the pressure of a powerful truss with a wooden pad which he had lately employed. He stated that there had been a slight evacuation from the bowels just after the hernia had become incarcerated. He was

directed to be freely bled, which was to be followed by a warm bath ; cold applications to be then applied to the tumor, and an enema administered.

In the afternoon, in spite of these remedies, the symptoms all became aggravated ; the pain in the abdomen was intense, and after all reasonable efforts had been made to effect a reduction, Dr. Warren determined on the operation, and requested the attendance of his colleagues Dr. Hayward and Dr. Townsend, who agreed with him in its propriety.

An incision two inches long was made over the external abdominal ring, dividing the skin and subcutaneous tissues, and exposing the fascia propria. A small opening was now made in the fascia just below the ring, so as to allow a director to be carried perpendicularly to the body, between this and the hernial sac, and a slight incision of the ring allowed the director to be carried under the tendon, which was then divided. On the division of the stricture the reduction of the hernia was effected without difficulty, and the patient immediately expressed himself relieved. The wound was brought together by three points of suture. Three hours after the operation, the patient had a spontaneous evacuation from the bowels.

On the day following the operation, it was quite striking to notice the difference in the appearance of this patient from that usually presented after an operation for strangulated hernia. His countenance was animated, pulse slow, skin moist and a decided expression of relief was visible. His subsequent symptoms scarcely require to be noticed. The wound healed by the first intention, and he was able to rise from his bed on the fourth day, keeping his hand over the compress that covered the abdominal ring. The T bandage had been omitted as useless and even pernicious. After fourteen days from the operation his truss was applied, preparatory to walking about freely, and on the 16th he was well enough to require no further treatment.

A subcutaneous incision of the ring had been thought of by Dr. Warren, but the ring could not be felt through the thickened integuments. The operation actually performed was however easier, safer and less prolonged than a subcutaneous operation. In fact, it is difficult to see the peculiar advantage in applying the subcutaneous incision to strangulated hernia, that is, provided the operation be truly subcutaneous ; for the complicated operation described by the celebrated orthopedist, Guerin, in which he made two incisions, one over the upper, and another over the lower ring, and in which the air appears to have been freely admitted, hardly seems to have the advantages to be

expected from this method. If then a real subcutaneous incision were attempted, it would be found very difficult to divide the superficial fascia covering the abdominal ring, without endangering a wound of the sac and perforation of the intestine.

The mode adopted in the subject of this case, and which originated with Petit, is undoubtedly the best that can be applied to strangulated hernia, and we do not see why it should not always be attempted. If the hernia be so large as to cover the ring, it may be difficult to expose the latter so as to divide it, but this can generally be accomplished.

If on the division of the ring we should find it impossible to reduce the hernia on account of the existence of the stricture at the neck of the sac, we have only to extend our incision, open the sac, and proceed after the ordinary way. This case derives additional importance from the startling doctrine that has lately been advanced by Malgaigne, that the stricture is never caused, or at least that this has never been proved to his satisfaction, by the tendinous openings of the abdomen, but is almost always found in an induration of the neck of the sac, caused by the long-continued pressure of a bandage. It may be offered, together with others of a similar character performed by surgeons abroad, whose accuracy cannot be questioned, to show that the strangulation may occasionally exist at the abdominal ring.

To these cases I may add one of some interest, showing the powerful influence of fear in effecting the reduction of an apparently irreducible hernia, which had resisted all the ordinary means of treatment.

I was requested by a medical friend to perform the operation for a patient laboring under the most urgent and distressing symptoms which I have ever witnessed in this disease. The hernia was an old one, and had first become strangulated two days before. In addition to severe pain in the abdomen, the patient had an almost continued vomiting, with violent spasmodic action of the whole body, and more particularly of the lower extremities. Before I saw him, he had been thoroughly bled to syncope, ice had been applied to the tumor, and a tobacco enema had been administered, but all without effect, and the only hopes of saving life appeared to be in the speedy resort to surgical means. All the preparations for the operation being made, as I was just on the point of commencing the incision, his courage gave way, and he obstinately determined not to submit to it.

I then stated to him the great danger of any delay and the probability of a very speedy fatal termination, if the intestine was allowed

to remain longer in its present situation. The danger of death before his eyes seemed to have a powerful effect on him, and while I was speaking the spasmodic action of the body relaxed, and the patient became deadly pale. Having my hand on the tumor, I felt a slight relaxation in its contents. I immediately seized the intestine within the abdomen through the abdominal parietes with one hand, and making with it a strong extension, used a slight compression with the other on the sac, and the hernia slipped back into the abdomen.

Had it not been for the occurrence of the accidental circumstance mentioned above, we have every reason to believe that the mere intensity of suffering must have shortly terminated his existence.

ART. IX.—*Remarks on Iritis, chiefly from Observations at the Massachusetts Charitable Eye and Ear Infirmary, with Cases.*

By GEORGE A. BETHUNE, M.D., one of the Assistant Surgeons.

IN the following pages I propose to remark on some important points connected with iritis. In the course of these remarks I shall compare the works of some of the most distinguished writers on the diseases of the eye. Having done this, I shall endeavor to estimate the value of their conclusions. This attempt will be based partly on the impressions I have derived from my general experience in this disease, and partly from a rough analysis of cases in my possession. And here I wish distinctly to be understood, that I am far from attempting a complete treatise on iritis, or even on any of its varieties, and that if, in the course of this paper, I should offer any statistical results, they are presented only as imperfect approximations to truth, and as liable to be set aside if contradicted hereafter by those of others, whose superior qualifications or more extended opportunities for observation may claim for them greater weight than mine can be supposed to possess.

In regard to these cases, indeed, it is proper to state that they are very imperfect, although differing much in the degree of imperfection. They are taken mostly from notes made at the infirmary. A considerable portion refer to out-patients, and were frequently written in the hurry and confusion attending active professional labor. These last, too, are seldom finished, owing to the fact

that these patients, who belong to the laboring classes, are generally unwilling to present themselves at a charitable institution, unless prevented by severe disease from pursuing their usual occupations. Where a circumstance, however, is not recorded, I shall not hesitate to mention it; when it *is* recorded, I believe its existence may be relied on.

For the details of a considerable number of these cases, I am indebted to my friend and associate, Dr. Hooper, who kindly offered me all in his possession on the subject. In the whole, they amount to about thirty, too few in number, I am aware, to lay a foundation for laws, but sufficient, I think, to add distinctness to the impressions afforded by general experience.

The usual division of iritis in the more elaborate works on diseases of the eye, so far as it is based on the different forms of the inflammation, is into simple, syphilitic, rheumatic, arthritic and strumous. Some authors have increased the number of these divisions, but I believe these will be found sufficient for all practical purposes.

In this connection I thought it might be at least curious to compare the frequency of iritis with that of other diseases of the eye. With this view I have examined the entries of patients applying at the infirmary from October 30th, 1829, to March 25th, 1842, including a period of twelve years and five months, nearly. I find that the whole number of cases of disease of the eye during that period was 7121. The number of cases of iritis, not including those resulting from injury, was 112; of these, 12 are recorded as syphilitic; making the proportion of simple iritis to other ophthalmic diseases as about 1 to 71, and that of syphilitic as about 1 to 593. These proportions are probably not very far from what would be found under similar circumstances, if a much larger number were taken.

From the same data I have taken the comparative sexes, ages and seasons of application for relief.

SEXES.									
<i>Simple Iritis.</i>					<i>Syphilitic.</i>				
Males	.	.	.	.	59	Males	.	.	.
Females	.	.	.	.	41	Females	.	.	.
<hr/>						<hr/>			
100						12			

Making the proportion of males to females in simple iritis, about 6 to 4. The number of syphilitic cases is so small that the propor-

tion is hardly worth noting. I thought, on the whole, however, it was best to give it.

AGES.

Simple Iritis.

Less than 10 years,	1	60 to 70	4
10 to 20	17	70 to 80	0
20 to 30	31	80 to 90	1
30 to 40	24	8 not mentioned	8
40 to 50	8		
50 to 60	6	Total	100

It will be noticed that only one patient was younger than 10 years. This was a girl seven years old, and her case is entered as chronic ophthalmia with iritis. The infrequency of iritis in young children, as shown by this table, corresponds entirely with my previous impressions, though I do not know that the fact has been hitherto noticed.* I believe that *pure* uncomplicated iritis will be found exceedingly rare in children. In this solitary case it was combined with disease of other textures, and this no doubt occasionally happens, especially in scrofulous subjects. The comparative infrequency of iritis after operations for cataract on infants, may probably be connected with this exemption. The oldest patient was 89 ; 7-9ths are included between the ages of 20 and 40.

In reference to the syphilitic cases, I will merely mention that the youngest was 15, the eldest 40.

Seasons.—The date of applications for relief can be considered as only a proximate indication of the period when the attack commenced. I have struck out of the 100 cases of simple iritis, in investigating this point, seven which are marked chronic. The remaining 93 occurred as follows.

January	5	August	1
February	11	September	10
March	10	October	8
April	9	November	4
May	5	December	10
June	12		
July	8		93

* Since writing the above, I find that Mr. Lawrence has made observations on the exemption of children from iritis with the exceptions I have mentioned, in substance corresponding with my own. Among the nine authors I had previously consulted, I found no statement of this kind.

Or for the Spring months	24
Summer	21
Autumn	22
Winter	26

Showing but little if any influence on the disease by temperature.

My future remarks will refer to inflammation of the iris, not syphilitic nor traumatic. Several cases will be given in which the rheumatic character was marked by the occurrence of rheumatism in other parts of the body, the only mode, as I think, by which rheumatic iritis can be made out. I am aware, however, that there are some who would undertake the diagnosis of this form of disease by the morbid appearances presented. I have never been satisfied that this can be done with any approach to certainty. One or more of these cases in my possession were manifestly allied to struma. I shall make some attempts to investigate the influences which this cause, as well as that of rheumatism, has exerted on the progress of iritis and on the effects of treatment in this disease.

Causes.—These have been, in some measure, anticipated by what has been already said of the divisions. In one sense, simple inflammation is certainly a cause of iritis, but what is the cause of this simple inflammation? We here come to a subject about which a great deal is said with confidence, but of which we really *know* but very little. Atmospheric changes, “taking cold,” is given, by the learned as well as the ignorant, as a sufficient general reason for this as for most other diseases. In the cases of which I have notes, 29 in number, they are divided as follows: 15, unknown or not mentioned; 1, exposure to cold; 2, scrofula; 1, exposure at sea to unwholesome emanations; 5, rheumatism; 1, smallpox; 1, vaccination; 2, scurvy.

In this list I have included all the *eyes* attacked. More than half, it will be seen, presented no known cause. If more pains had been taken, I dare say that more *supposed* causes might have been obtained; but even when the cause is given, in some cases it was probably only a coincidence. In the case, for instance, in which vaccination is given as a cause, it is noted that an inflammation of the arm occurred on the 8th day after vaccination, about which time the iritic symptoms commenced. It may be objected, that the predisposing and exciting causes are here mingled without discrimination. I can only answer, that, with regard to the action of most of

them, we know too little to be able generally to enforce this distinction.

Comparative frequency of single or double Iritis. Greater liability to attack of the right or left eye.—I do not find any thing on this subject in the authors I have consulted, though it is very possible that it has excited attention.

Of 24 individuals, I do not find that any were noted as attacked simultaneously in both eyes. In one, both eyes were affected at the time of his application, but his history does not give the particulars necessary to determine this point. Two others, in whom both eyes were attacked, were seized first in the left, and afterward in the right eye. The 4th patient had gone to work, and considered his eye nearly well, when he had another attack in the same eye (right).

The remaining 20 were affected, in the right eye, 4; in the left, 16; a singular disproportion, which may possibly be accidental, and which, in a larger number of observations, might be counterbalanced.

Symptoms.—The principal symptoms usually noticed by authors are, 1st, pain in and around the eye; 2d, diminution of vision; 3d, a zone around the cornea with other sclerotic injection; 4th, visible lymph in the pupil, or (what is usually considered as owing to its deposition upon or into the texture of the iris,) discoloration of the iris, giving to this membrane a darker hue than it naturally possesses; 5th, irregularity; and 6th, contraction of the pupil. To these should be added greater or less intolerance of light.

The pain is described as generally, but not *always*, severe, and *usually* worse at night. The degree of the loss of vision also, it is remarked, is subject to equal difference in amount in different cases. The zonular injection around the cornea, and the injection of the sclerotic at other points, is generally combined with more or less injection of the vessels of the conjunctiva, as is often the case in inflammation of all the other textures of the eye. The discolored iris, if before blue, becomes of a greenish hue; if dark, of a reddish brown, by the admixture of lymph with its coloring matter. The amount of visible lymph depends generally, but not always, on the violence of the symptoms and the previous duration of the inflammation. The irregularity of the pupil varies in its direction. The assertion that particular forms of the pupil are indications of the specific character of the iritis, I believe to be unfounded; at any rate, I have seen, in what there was every reason to consider as simple inflammation, the form of pupil described by some as diagnostic of sy-

philitic iritis. The contraction of the pupil is certainly a very common symptom. The opposite state, its dilatation, may, however, take place, as I shall presently prove, by reference to a case now under my care, in which the pupil is larger than in the other eye. I do not find that this occasional dilatation has been noticed by any author I have consulted, except as connected with other disease of the eye. The pupil sometimes appears not contracted when compared with its fellow, but it will usually be found not to dilate with the other when removed from the stimulus of light.

It will be observed that I use, in reference to the pain and loss of vision, the terms severe, considerable, slight, &c. I would gladly have been more definite, but, in the majority of cases, it was not in my power. The pain was generally considered *severe* which kept the patient awake at night, or which would have been sufficient to have produced this effect if it had occurred at that time. The *slight* pain sometimes was hardly more than an uneasy sensation. The expression *considerable*, was somewhere between the two. So of the vision, the loss was great when the patient could only distinguish the outline of objects; considerable, when he could not distinguish countenances; slight, when he could read very large print. I do not say that these tests were applied in every instance, though they often were; but the expression recorded was based on observations of affected vision corresponding nearly to these degrees.

There was *pain in and about the eye*—

Severe in	15 cases.
Considerable in	8 “
Slight in	4 “
Not noticed in	1 “
	<hr/> 28

The <i>pain was more severe at night</i> in	19 cases.
Not more severe at night in	3 “
More severe in day in	1 “
The time of its greatest severity was not mentioned in	5 “

<i>Loss of vision.</i> —This was great in	18 cases.
Considerable in	4 “
Slight in	3 “
Vision not affected in	1 “
Not mentioned in	2 “

<i>Zone or sclerotic injection.</i> —This was probably almost	
always present, and is mentioned in	21 cases.
Not mentioned in	7 “
<i>Discoloration of Iris, or visible lymph.</i> —This was pre-	
sent in	27 cases.
Not present in	1 case.
<i>Change in pupil.</i> —The pupil was irregular or contracted in	
No change is mentioned in	3 “
Its irregularity is mentioned in	25 “
Not mentioned in	3 “
Its contraction was mentioned in	
Not mentioned in	12 “
It was dilated in	1 “

Except in the case of dilatation it was always, except in one instance, mentioned as irregular when it was contracted.

TREATMENT.—In approaching this subject, a feeling of its immense importance adds to my regret for the difficulty of its just appreciation. Difficult it is, under any circumstances, and still more so with observations so limited in number and imperfect in detail as those I have now to offer.

I would observe, however, that there are few diseases, on the treatment of which so general a unanimity of opinion is found among writers of experience. English, French and German seem here, for a while, to lay aside their respective prejudices to unite in opinion, at least, on the main course to be pursued. Bleeding, general and local, and mercury, are agreed on by all as of the first importance in the treatment of iritis. Some rely more on the first, some on the last, and some, again, on their combination, from the commencement of the attack. Purgatives, antimony in nauseating doses, turpentine, blistering after the acute symptoms are past, and the local application of the extracts of stramonium, belladonna or hyoscyamus, are the auxiliary measures usually recommended. These narcotic applications are made either with a view to the relief of pain, or, which is generally the object proposed, for the purpose of dilating the pupil. This dilatation is intended to prevent the formation of adhesions by lymph of different parts of the iris with itself and with other textures, or of elongating these bands when formed. A difference of opinion exists regarding the proper period for the application of this remedy; some authors recommend it in the first stage,

others consider it dangerous at this period, and wait till the acute stage has passed.

The usual treatment at the Infirmary has been, bleeding, general or local, in amount proportioned to the violence of the disease; purgatives, usually saline, with infus. sennæ, or the compound powder of jalap—calomel, united with a small quantity of opium to prevent its being carried off too soon by the bowels, and administered in doses of one or two grains, according to circumstances, at night, or night and morning, and continued till the gums are affected, if the disease be not manifestly checked before this effect is produced. Opium or Dover's powder is given freely for the nocturnal pain; blistering and the application of the stramonium extract, after the acute inflammation is subdued. Lotions seem to have but little influence either on the progress of this disease, or in alleviating pain; warm, however, are generally more agreeable than cold, and are therefore to be preferred. Turpentine has rarely been used at the Infirmary, as mercury has been more relied on for fulfilling all the indications for which that medicine has been given.

To substantiate what I have before asserted, of the similarity of the practice of surgeons of different nations in iritis, at the risk of being tedious, I have made a sketch from a number of ophthalmological writers, to whose works I have had access. The list might be much increased, but it would probably be but a repetition of the same thing. I have placed the remedies in the order I have found them in their works.

Saunders (posthumous works, by Mr. Farre, 1816), who wrote on this subject before the introduction of the mercurial practice in England, relies on general and local bleeding, cathartics, antimony, and especially on the application of belladonna, which, however, he does not seem to have generally used during the greatest activity of the inflammation.

Travers (1817). Bleeding, general and local; mercury.

Middlemore (1835). Bleeding and purgatives; mercury, alone or with opium, or Dover's powder; mercurial ointment, with opium. Of turpentine, he does not speak from his own experience. Belladonna, which he applies from the beginning with the view of dilating the pupil as early as possible, though he says that, during the acute stage, the iris is not susceptible of its action; counter-irritation in chronic cases.

McKenzie (1830). Bleeding, general and local; purging; anti-

mony; opiates; mercury; turpentine (of which he does not speak from experience); blisters, after the acute symptoms are subdued; belladonna, which he urges in every case and in all stages. He agrees with Middlemore as to its want of power during the acute stage. With the last author, also, he has seen cases where its action has been sufficient to detach the iris proper from the uvea, leaving this latter attached to the capsule of the lens, whence it never after separates. He does not, however, consider this a sufficient objection to its employment in all stages, and says it will be very rare if proper means are promptly employed to subdue the inflammation.

Walker, of Manchester (1840). Bleeding, general and local; mercury; belladonna, applied from the very earliest stage; turpentine, which he does not say he has used, and of which he does not speak very warmly; opium, purgatives, diaphoretics, &c. Local applications in the acute stage he thinks of little value.

Lawrence (Philadelphia edition, 1833). Iritis may go through its course and come to an end without treatment. But when thus neglected, it often produces effects more or less injurious to vision, as contraction and adhesions of the pupils, or their obstruction by adventitious membranes, and large effusion behind the iris, with total loss of sight. Again, the affection may be terminated and controlled by common antiphlogistic means, of which he gives an instance. He has, however, the greatest confidence in mercury, carried to ptyalism, if the disease do not yield to a slight action on the mouth. He says that, in general, the antiphlogistic treatment is not sufficient, and that formerly he saw many eyes lost, or permanently much injured, by iritis, which might have been entirely restored if the mercurial treatment had been resorted to. Belladonna he uses after the active inflammation has yielded; though he says it can do no harm, and may do good, if applied earlier about the eye. He says that belladonna and other narcotics have often power to dilate the pupil, even when it no longer varies with the quantity of light admitted.

Dr. Frick, of Baltimore (1823), whose work is based on the doctrines and practice of Beer, of Vienna. Bleeding, general and local; cathartics; nauseating doses of antimony; calomel, with opium or Dover's powder; frictions with mercurial ointment and opium. Beer censures the indiscriminate employment of belladonna or hyoscyamus, and thinks them only admissible after the symptoms of inflammation have been, in a great measure, subdued. He supposes

that "they have a strong tendency not only to weaken the powers of the retina, but of the iris itself." This last objection, I must say, appears to me rather fanciful, as I have known of cases where the stramonium extract, a similar preparation, has been used for months and even for years, without any such result.

Weller, of Dresden (French translation, 1832). Antiphlogistic treatment in proportion to the violence of the inflammation for the 1st stage. For the 2d, a purgative of calomel and jalap, hot fomentations, blisters, and, *if there be not too strong a counter-indication*, the calomel may be continued night and morning, in doses of from one grain to one grain and a half. If this does not act freely on the bowels, saline cathartics may be given. Pediluvia and dry warmth should be also used at this period. The hyoscyamus and belladonna extracts are also recommended by him in the interval between the 1st and 2d periods of the disease. I should be glad to show exactly what the author means by the first and second stages of the disease, but unfortunately he does not speak with sufficient distinctness to enable me to do so.

Sichel (Paris, 1837). Bleeding, general and local; mercury, alone or with opium; mercurial inunction; turpentine, of which he personally knows nothing, having never had occasion to employ a substitute for mercury; belladonna; hyoscyamus or stramonium, alone or with mercurial ointment by friction or in solution, as a collyrium, when the disease is confined to the serous tissue; but if the whole iris be affected, he uses the belladonna not only in both these forms, but also internally, and recommends its combination in doses of one quarter to one eighth of a grain with each dose of calomel. He says that every paroxysm of pain is accompanied with a further exudation of lymph on the pupillary margin, and therefore that it is of great importance to prevent the recurrence of these paroxysms by the external application of opium. The idea of preventing a product of inflammation by drugging a patient, so that he shall be prevented from feeling a symptom, seems to me rather absurd.

Velpeau (Paris, 1840). Bleeding, general and local; purgatives, at the head of which he puts calomel, administered in doses of from eight to fifteen grains in twenty-four hours! If salivation come on, he suspends it, and if, after several days of this medication, salivation do not ensue, he rapidly diminishes the dose, or soon suspends it altogether. The conviction of the utility of calomel must be strong which could induce a Frenchman to administer so freely a medicine

generally regarded with so much suspicion by his countrymen. Colchicum he has tried without much success. The antimonial treatment he thinks useful after the inflammation begins to subside. He has tried the oil of turpentine, but has no great opinion of its efficacy—revulsives, when the disease is passing to the chronic stage. Local medication he also recommends, such as emollient poultices, which he renders narcotic as the disease advances, &c. If the disease be combined with corneitis, he uses stimulating collyria and mercurial inunction. He has tried the belladonna at every stage of iritis, but is convinced that it does no good except at a late period of the disease, when he thinks it highly useful.

Carmichael. In 1829, this gentleman published his “Observations on the efficacy of turpentine in the venereal and other deep-seated inflammations of the eye, with some remarks on the influence of that medicine on the system, accompanied by cases.” He has the greatest confidence in the efficiency of mercury, and speaks of “its almost unerring powers over the inflammation of the iris.” But he recommends the turpentine in cases where mercury is inadmissible in consequence of its occasional injurious influence, or of the debility induced by protracted disease. On the whole, so far as I can judge from the allusions made to this medicine by surgeons who have tried it since Mr. Carmichael’s work was published, I should think no very strong confidence existed in its medical agency. Mr. Guthrie, who made some trials of it, says, “in some cases it succeeded admirably; in others, it has been of little service; and in some, unequal to the cure of the complaint.”

The degree of improvement which may take place after treatment has commenced, must of course greatly depend on the state of the eye at the time it is first seen by the surgeon. The amount of lesion present does not by any means depend on the previous duration of the disease. In one case of the series before me, for instance, the disease had only existed for two weeks; and in another, dated from a period of three months. Yet in the first, no improvement of vision had taken place at the end of fifteen days; while in the last, this improvement is mentioned on the 5th day. On referring to the first examination of these two cases, we find in the first, a mass of lymph is seen occupying the upper part of the pupil, but in the second no visible lymph had been effused. It is probable that in the first the lymph seen had already become organized and was beyond the reach of absorption. The difficulty of arranging so small a number as

twenty-eight cases in categories, so that in the degree of mischief already effected and in other important circumstances they shall be made to correspond, is necessarily very great. Without such an arrangement, an attempt to estimate with exactness the effect of treatment would only lead into error. Some points, however, which I have ascertained, it may be useful to state.

Bleeding.—This was employed generally or locally in twenty-two of the twenty-eight cases. Of its influence on the termination of the disease in these cases, which I have reason to think was very considerable, either from its own powers in subduing inflammation, or by preparing the system for the introduction of mercury, I have no means of giving an average approximation. General bleeding was employed five times, in quantity ranging from eight to eighteen ounces. The effect on the pain was as follows: in four, the relief was immediate; in one, the immediate effect is not mentioned. This relief in two continued only till night; in another, the pain was present the next day but much less severe; in the fourth, the relief continued till the 5th night following. Cupping, generally from the temple, and varying from one to ten ounces, was employed fifteen times. Leeches, in number from four to six, were used fourteen times.

The immediate effect is mentioned seventeen times.

There was no relief, once; relief till night, once; till 2d night, once; till 3d night, three times; till 4th night, once; till 5th night, once. There was relief for two days, twice; for four days, three times; for five days, once; for six days, once; relief, of which the continuance is not mentioned, once. Relief, permanent, three times. Four times the immediate effect is not mentioned, but pain is not alluded to afterward. Once the immediate effect is not mentioned, but on the 3d day after the pain is recorded as having returned. Seven times, the immediate effect is not mentioned, and owing to the imperfection of the report or to the patient's non-appearance afterward, no inference can be drawn.

Mercury.—This was used in all the cases, and the gums were affected in 13. The days on which the mercurial affection took place, dating from its commencement as a course, were as follows: On the 4th day, 3; 5th, 3; 6th, 1; 7th, 1; 9th, 1; 13th, 1; 19th, 1; day not known, 1

In the cases affected on the 13th and 15th days, as will presently be seen, the mercurial was interrupted for a day or two, after hav-

ing been taken several days. I shall now give a sketch of the mercurial treatment in these twelve cases, and also of that in fourteen other cases, in which the gums were not affected. Prefixed to each will be the duration of the disease before the patient was seen. In these two lists, by the first day, unless the contrary be mentioned, is to be understood the day on which the mercurial was commenced.

FIRST LIST, 13.—Cases in which the mercurial was continued till the gums were affected.

1st Case.—Duration of disease before visit, two weeks. Gums affected on the 7th day. No improvement of vision on the 15th day. Not seen after. (This was the patient before alluded to, in whom the lymph seen in the pupil was probably organized.)

2d.—Duration of disease before visit, sixteen days. Gums affected on the 4th day. Improvement of vision on the same day. Much improved two days after.

3d.—Duration of disease, three weeks. Improved vision on the 3d day. Improvement continued to 4th day, when the mercurial was stopped. On the 9th day it was resumed, but slight further improvement having occurred, and none for the day preceding. On the 6th day after this the gums were affected, and some further improvement is noted. The pill was then directed to be taken every other night only, instead of night and morning. Five days after his vision had much improved, and he is directed to continue the pill as before.

4th.—Duration of disease, one week. This patient was of a highly scrofulous habit, from which she was suffering at the time of her attack. Her mouth became sore on the 5th day. She was discharged on the 40th day, with her vision but slightly improved. She was seen six months after, and the sight remained much impaired.

5th.—Duration of disease, one day. This patient had almost entirely recovered from one attack, had gone to work, and had continued working nearly three weeks, when he was again attacked in the same eye. The gums were affected on the 19th day. Improvement of vision is mentioned in the next report, on the 23d day. The same day he left the house contrary to advice, and was not seen after.

6th.—Duration of disease, one week. This patient was first attacked in the left eye. The gums were touched on the 3d day. Improvement of vision commenced on the 4th day, and about twelve days after, this eye had entirely recovered. At this time,

7th.—The right eye was attacked. Duration, before visit, one week. Mouth affected on the 6th day. Improvement of vision commenced on the day after. Eleven days after this, a slight dimness of vision remained. About a month from this time the patient was seen, and both eyes are recorded as well, except a slight weakness, which still remains.

8th.—Duration of disease, twenty-nine days. This patient, by the advice of a physician, had been leeches three times, with temporary relief; had been blistered and had taken a pill for seven nights before he was seen at the Infirmary. On the 7th day, his mouth was sore and the vision had begun to improve. He was discharged seventeen days after, much improved.

9th.—(*Rheumatic.*) Duration of disease, three weeks. Gums were affected on the 5th day. Two days after, eye has much improved. Was not so well the next day, and continued to vary till the 19th day, when the improvement was sustained, and he was discharged well on the 31st day.

10th.—(*Scrofulous.*) Duration of disease, seven days. The mercurial was not given till the 3d day after this patient was first seen. He was then getting worse. On the 4th day after, his gums were affected; and on the same day the vision is reported improved, and four days after very much improved. Was not again seen.

11th.—Duration of disease, three weeks. This patient was not again seen till more than four months after her first visit. It was then ascertained that she had taken the mercurial till her gums became affected, when the vision improved, and she recovered entirely from the iritic attack.

12th.—(*Rheumatic.*) Duration of disease, twenty-five days. Gums affected on the 6th day; no decided improvement at that time. Two days after, *being then salivated*,

13th.—The other eye was attacked. The soreness of the gums was kept up for some time. The state of this patient varied for about a month, when he began steadily to improve. About a month after this, the affection of the irides had nearly disappeared.

SECOND LIST, 14.—Cases in which the mercury was *not* continued till the gums were affected.

1st Case.—Duration of disease before he was seen, five days. This patient had so much improved on the 8th day, that the mercurial was omitted. (This was the 1st attack; the 2d is referred to under the 5th case of the preceding list.)

2d.—Duration of disease, three months. (This was a relapse after an attack from which he had partially recovered.) Was not seen after the third day; he had then begun to improve.

3d.—Duration of disease, one month. This patient was well on the 6th day.

4th.—Duration of disease, three weeks. This patient was well on the 8th day.

5th.—Duration of disease, uncertain. Not seen after the 1st day.

6th.—(*Rheumatic.*) Duration of disease, one week. Omitted mercurial on the 3d and 4th day, then resumed it, and on the 6th day after, the gums were not affected, and the eye is reported improved. Was not again seen.

7th and 8th.—In this patient both eyes were affected at the time of his application. The right slightly, the left severely. He was first attacked three months before while at sea, and with others of the crew had been affected with scurvy, from which he was then suffering. In consequence of this the mercurial was not given till the 3d day after he was first seen, when the left eye had become so much worse, that he was directed 4 grs. of blue pill night and morning. On the 3d day after this the vision is reported improved. Six days after he was discharged nearly well. He was seen six months after this, and his eyes were perfectly well.

9th.—Duration of disease, five days. This patient took calomel irregularly. I do not find exactly how long it was continued. It was not a severe case; she was well in eighteen days from the time of her first attack.

10th.—Duration of disease, three or four weeks. This patient, with severe rheumatic iritis, took calomel and Dover's powder several nights, without improvement. It was then omitted, and colchicum was substituted. He was discharged on the 40th day, with the vision "slightly, if at all, improved."

11th.—Duration of disease, two weeks. This patient was ordered calomel and opium at night. On the 5th day was much improved, and on the 12th day was well.

12th.—Duration of disease, four weeks. This patient took the mercurial at night only. On the 6th day he had so much improved, that it was omitted, with directions to resume it if the bad symptoms returned. He was not seen after.

13th.—Duration of disease, five weeks. This patient took the

mercurial night and morning. On the 5th day the eye is reported improving. Was not again seen.

14th.—Duration of disease, four weeks. This patient took a grain of calomel night and morning. On the 13th day, being much improved, it was directed at night only. Was not seen afterwards.

It will be observed, by those who take the pains to go over these lists, that three of these patients received little or no benefit to vision while under treatment. Two of these had the mouth made sore, one had not. The 1st of these I have already spoken of. The 2d was of a highly scrofulous constitution. The 3d was evidently rheumatic. I shall give these cases in detail at the end of this paper. In three other cases, in one of which both eyes were attacked, symptoms of rheumatism appeared. One of these patients (9th of the 1st list) went on to get better and worse till the 19th day, when he began steadily to convalesce. In the 2d (12th and 13th of the same list) the disease pursued a like irregular course. The 3d (6th of the 2d list) was convalescent from rheumatism when his eye was attacked. He took the mercurial irregularly at first, having omitted it two days by mistake, then took it steadily night and morning, and on the 6th day after was improved, and was not seen after. In three, then, out of four of these cases, the disease of the eye partook of that treacherous nature, so characteristic of rheumatism when occurring in other parts of the body. In the present state of our knowledge, I do not know any medicine which can safely be substituted for mercury in iritis, even of a rheumatic character, when the pupil is filling up with deposited lymph; I have, however, far less confidence in its efficacy in these cases, than in others into which this element does not enter.

I shall venture the same remark in reference to iritis occurring in individuals of a scrofulous habit, and which I have observed generally in other diseases of the eye, where this diathesis is present. I have often seen great benefit in these cases from the continuance of the mercurial for a short time, but generally I believe it will not be found beneficial to carry it so far as to affect the system.*

Of the other patients, including twenty attacks, one was not seen after the first day of treatment; one was not seen after the 3d day,

* The case marked 10th, however, in the 1st list, was certainly a scrofulous patient, and the mercurial was probably deferred on that account. The disease began to yield as soon as the gums were affected. In all cases of ophthalmic disease, complicated with scrofula, the effect of treatment must be carefully watched and the remedial measures varied to meet its changing phases.

he had then begun to improve. All the others (eighteen attacks) were either well or much improved and improving when last seen, except one, who was somewhat improved, and left the house the day this was recorded (5th case, 1st list), and one who was not seen after the 5th day, and was then improved (13th, 2d list). Excluding these two, the mouth was affected in eight and not affected in eleven cases. In these eight cases, the improvement of vision in six commenced within twenty-four hours of the mercurial affection. In the 7th case, within four days. In the 8th case, the patient reports the mercurial affection and the improvement as occurring together.

In reviewing the eleven other cases, in which the mouth was not affected, I find a strong confirmation of the good effect of the mercurial course, though from the nature of things it is less striking than in the other series.

Turpentine I find mentioned as having been used only in one patient. This was not an infirmity case. He is referred to under the rheumatic cases as having an attack in the other eye during salivation. I gave it in this instance in doses of a drachm three times a day for two or three days, but without obvious effect.

Opiates were freely used where they were indicated by the symptoms, and probably in some cases sustained the relief which was first effected by the bleeding.

Cathartics were usually given at the first visit, before the mercurial course was commenced, and were occasionally repeated when they seemed indicated.

The duration of the disease previous to treatment, it will be seen, was very different in different cases, varying from one day to three months. The date of commencing improvement was almost equally various, and no approach to uniformity in the period of convalescence, dependent on the previous duration of the disease, can be made out. I wish to draw attention to this point, as evidence that this disease cannot be classed among those which have been termed self-limited.

Complications.—The most frequent by far is inflammation of the cornea. The choroid is also mentioned as sometimes attacked. I believe it to be rare for inflammation *first* to attack the iris and then extend to the choroid. The conjunctiva, as I believe I have before mentioned, is seldom entirely unaffected in iritis. Beside this slight conjunctivitis, in the 27 cases before me,

There was corneitis (slight) in	5 cases.
“ “ corneitis (severe) in	5 “
“ “ corneitis with ectropium and inflamed lids, in	1 case.
“ “ conjunctivitis, severe, with chemosis, in	1 “
“ “ effusion of pus into the anterior chamber (hypopium) in	1 “
“ “ slight corneitis with hypopium, in	1 “
“ “ no complication in	13 cases.

 27

This degree of frequency of corneal complication, I do not find mentioned, and somewhat surprised me when I came to investigate these cases.

Sequelæ.—The most common is a change in the form of the pupil. In many cases it never resumes entirely its original shape, though the vision may be nearly or perfectly restored. This is caused either by an organic change in the texture of the iris, or by such a lesion of its sensibility, as to prevent the proper performance of its appropriate functions. Not an unfrequent result, and a very serious one, is the formation of an adhesion between its posterior surface and the capsule of the lens. This sometimes terminates in partial or total opacity of the capsule, or of the lens itself.

We have an instance of this in the following case, which I find among my notes.

Dec. 14, 1840.—*Affection of Irides (cataract?)*. Patrick Donahy, æt. 42. Says his health was generally good when a boy, but at the age of 12 had the measles, which left his eyes weak. Two years since was attacked with inflammation in both eyes, which confined him about one month, without severe pain. This left both eyes somewhat imperfect as to vision, and they continue much the same at this time.

One year ago had another attack, which confined him about two months, but produced no permanent effect on the eyes. For three months past he thinks that the sight of the left eye has been getting more dim, without soreness or other trouble. Can see to read large print with the right eye, but with the left can barely distinguish countenances.

Now, right eye, cornea clear, pupil somewhat irregular. At inner border of iris are seen some slight white filaments floating towards capsule. No apparent opacity of lens or capsule. Left eye, pupil

more irregular; filaments on free edge of iris as in other eye, but more numerous. Iris dilated irregularly,* and there is seen a clouded, greenish appearance, apparently rather deep-seated. With the taper three images of the flame are seen, the two posterior quite imperfect.†

I will add a short account of another patient, which I took a few weeks since, as probably coming under this head, though it perhaps should be referred to inflammation of that part of the membrane of the aqueous humor which invests the anterior capsule.

Wm. S., æt. 64 (intemperate). Health generally pretty good. Thinks his eyes began to fail him about three years ago. Was at that time troubled with an occasional slight shooting pain through the eyes. This was accompanied with commencing dimness of vision. Since then they have been getting on the whole worse, though from time to time they have remained about the same for months together. His present symptoms are, dimness of vision; sees better in the shade; objects appear "broken and multiplied," especially to the right eye.

On examination, conjunctivæ somewhat injected. Pupils irregular. Irides play with tolerable freedom. The pupillary margin of the iris in both eyes is evidently adherent at points to the capsules. Small, opaque striæ are seen shooting across the capsules from these points. He can still see to read with glasses.

VARIETIES.—*Chronic iritis* is usually classed as a distinct form. The preceding case properly comes under this head. I have seen, in several instances, that constitutional tendency to this disease, alluded to by writers, which occasions its frequent reproduction, but I have no notes on the subject. The following case I believe to be a very uncommon modification of chronic iritis. I find in Weller an allusion to what he says McKenzie describes as partial iritis (in which a portion only of the iris is involved), and which he says he has never witnessed. I have looked into McKenzie, but cannot find the passage.

In this instance, it is true, the iris generally is described as being darker than in the other eye, and would therefore seem to have been somewhat affected throughout. The main disease, however, was in a

* By the application of stramonium.

† This experiment was, I believe, first introduced by M. Sanson, of Paris, for the purpose of aiding in the diagnosis of cataract.

part of the iris only, which presented a very curious appearance. It made so much impression on my mind, that I have it now distinctly before me. The pupil is described as large. I remember that it appeared dilated, and was larger than its fellow.

Nov. 30, 1840.—*Chronic Iritis (partial)*. Heman B. Matthews, æt. 20. When quite young was subject to “humors,” swellings in the throat, &c. From the age of 12 till within two years, his general health has been quite good. Since that time has had an eruption about face, and for a year past occasional pain and “weakness” under the right false ribs; his strength, too, within this period has decidedly diminished.

About two and a half years ago the left eye began to trouble him; was weak and red, without pain. The eye went on in this way till one year ago, when the sight began to fail, and has continued growing worse ever since, on the whole, though it would get better and worse from time to time. About eight months since, the eye began to pain him, and this pain has occasionally recurred, but never severely. Now, right eye well, except slight lippitudo. Left eye—cornea clear. Conjunctiva somewhat injected, especially near outer central edge of cornea, about which spot some fine pink vessels of the sclerotic are also seen, apparently going to the ciliary processes on that side. Iris is generally darker than in the other eye, with a deep brown spot at outer edge; the pupil is large, not playing readily, irregular. The vision with this eye is very imperfect; on looking straight forward he cannot even distinguish the window sashes; but on looking outwards can see the slats of a chair. Cupping, to $\frac{3}{4}$ iv. R. Hyd. Submur. gr. j., in morning, and the same gr. ij. c. Opii. gr. j. at night.

Dec. 1.—Eye was made easy by cupping, and continued so for one hour, when the uneasiness returned and still continues. Continue treatment.

6th.—The same; mouth not affected. Continue s. mur. as above.

9th.—Mouth slightly sore; says his vision has decidedly improved. Continue the pill at night only.

30th.—Mouth the same; vision as at last report. Omit mercurial.

Jan. 6, 1841.—For the last day or two has had some pain in the eye, which appears more injected. Cupping, to $\frac{3}{4}$ iij.

20th.—Pain relieved by cupping, but has lately returned. Vesication to brow of same side.

23d.—Pain relieved, and eye has been comfortable since vesication.

Feb. 11.—Aqueous humor has been quite cloudy of late, but since the last blister (a few days since), has cleared.

March 18.—Discharged. Improved.

Remark.—In this eye, the dilatation of the pupil was probably connected with some degree of amaurosis. The slight opacity anterior to the retina was insufficient to account for so great a diminution of vision, had that membrane remained unaffected.

I shall now proceed to give a more detailed account of the three cases, in which little or no benefit to vision occurred while under treatment.

June 26, 1837.—(*Iritis, single.*) John Dow, æt. 50, laborer. Says his health is generally good. Has been in the daily habit of taking ardent spirit. About a fortnight since was taken with pain in the right eye; did not observe redness or swelling at that time. This pain has continued at intervals since, sometimes more severe at night. The sight had much diminished a few days after attack, and so continues. Now, left eye well. Right eye very painful. Pain extends around the eye and over forehead; bowels open. Has been eating meat and broth since attack. On examination, conjunctiva of globe and lids much injected; pupil irregular; lymph is seen occupying the upper part. Cupping to $\frac{3}{4}$ viii. Cath. senna and salts. Fomentatio tepida. Diet, liquid farinaceous. Pil. s. mur. gr. ij. and opii nocte manequæ.

June 28.—Had very little pain after cupping; was easy that day, and night and yesterday. Was kept awake by pain last night, and to-day it is more severe than ever. Since last night has been unable to see anything with the inflamed eye. Took cathartic, which operated freely. Has taken pills as directed. Mouth not sore. Repeat cathartic. Continue pills. Cupping to $\frac{3}{4}$ iv. Take a pill of camphor and opium at night, if the pain should be severe, and repeat it in an hour if not relieved.

June 30.—Took the calomel as directed, and also two pills of camphor and opium at night, at the interval of one hour, with relief of pain. Freely purged yesterday and the day before by cathartic. To-day pain is diminished. Can just see his fingers with the right eye. Complains of the tears scalding in the left eye. Is directed three pills of calomel a day. Repeat camphor and opium at night if required.

July 2.—Pain less last night and the night before, but was obliged to take the pills of camphor and opium. Took five pills of submur.

yesterday and two this morning. To-day gums somewhat tender and swollen. Eye less injected. Pupil remains much the same, about half filled with lymph. Vision as at last visit. Omit s. mur. to-day, but to-morrow take one morning and night. Continue diet, and pills of opium and camphor if requisite.

July 3.—Says he suffered much from pain last night, but took but one pill of camphor and opium. Much troubled by diarrhœa. Mouth quite sore. Take a pill of calomel (gr. j.) and opium morning and night.

July 5.—Injection of eye much diminished. Vision about the same. Pain last night much less severe. Mouth very sore. Asks for broth; may have it. Continue one pill a day.

July 7.—*No improvement of vision. Mouth more sore. Injection and soreness of eye nearly gone. Pupil about the same. Omit pill. Rose-leaf tea for wash to mouth.

July 9.—Has used the rose-leaf tea with relief to mouth. Pain very little since visit. Sight the same. Complains of adhesion of lids on waking. R. Ung. Hyd. Nit. Mit. gr. xv. Ung. Aq. Rosæ, ʒ j. M. Apply a little of this ointment to the edges of the lids at night. Substitute cold for warm applications.

Remarks.—This patient was not seen after the last report. I have therefore included him among those whose vision received no benefit from the mercurial treatment. The severity of the attack, and the great danger to which the eye was exposed, induced me to give the mercurial with more freedom, and to continue it longer than is generally necessary or advisable.

Dec. 4th, 1838.—*Corneitis with Iritis (single).* Louisa Blood, æt. 19. Has generally enjoyed tolerably good health. Last winter had a swelling under the left axilla, which was opened. Last summer had sores in the nose, which disappeared after using an ointment, and a difficulty of breathing through the nose, which still continues. About two or three years since, had inflammation of the left eye, which lasted eight weeks, accompanied with almost total loss of vision, which however has returned, and has continued perfect ever since. Two or three weeks since had a slight weakness of right eye, which disappeared, but a week since returned, with diminution of vision, and pain at night in the ball and over the orbit. This has increased every night since attack. Now, left eye, well.

* Said afterwards that he thought he could see a little better.

Right eye—pink injection around cornea. Cornea hazy over whole surface. Iris appears darker than in the other eye, and apparently irregular at lower part. Can only see light. No pain at the present moment. (Admitted to house.) Cupping to $\frac{3}{4}$ vi. Pil. cal. (gr. ij.) and op. nocte maneque; 1 gr. of opium at night. Liquid farinaceous diet; lotio tepid.

5th.—Much less pain at night. Eye less injected. Continue remedies.

6th.—Eye somewhat more injected. Venesection to $\frac{3}{4}$ viii.

7th.—Injection much diminished. Eye somewhat clearer.

8th.—Eye about the same. Mouth slightly sore. Reduce submur. to gr. ij. at night only. Omit opium pill.

10th.—Has had little or no pain. Mouth more sore. Reduce submur. to gr. j. at night.

15th.—On 13th, had three leeches to temple. Since yesterday, has substituted cold for warm applications. On 11th, mouth was quite sore and submur. was stopped. Now, eye quite weak. Slight injection remains around cornea. No pain. Mouth nearly well. Sight and dimness of cornea about the same. Continue cold applications.

Jan. 12, 1839.—Patient has continued in the house to this time, and has taken quinine without much improvement. A week since was cupped for pain in the eye, which was relieved. Now, eye comfortable, but opacity remains about the same. May be discharged, to return if the eye become worse.

July 5, 1839.—Patient was seen this day. Left eye, well. Right eye, slight dimness of cornea remains. Pupil irregular. Sight much impaired.

Remarks.—From the previous history of this patient, we have strong reason to consider her of a scrofulous constitution. The complicated disease of the cornea and iris was of a severe character, and with the exception of the relief from cupping, which three times followed the application of this remedy, obstinately resisted the remedies employed. The employment of calomel at high doses, and pushed to salivation, had no apparent effect on the course of the disease. Time, however, effected nearly a total removal of the affection of the cornea, and in part that of the iris. Her vision also was partially restored.

Iritis, single (rheumatic), with acute ophthalmia and lippitudo.

Jan. 5, 1839. Henry McDivat, æt. 40. Scotchman. Has been ex-

posed to hard labor for several years. Left his native country six years ago, leaving his wife and children. Has had habitual good health; but one year since had a syphilitic affection, for which he took much mercury. For three months past has had lippitudo, and for three or four weeks has had more severe inflammation of right eye, manifested by redness, severe pain at night and partial loss of vision. Has had no effective treatment. Now, somewhat broken down by hard work—inflammation of the edges of the lids of both eyes. Right eye—conjunctiva much injected, with slight chemosis. Slight haziness either of cornea or of aqueous humor beyond it. Iris darker colored than in the other eye. Pupil irregular; no distinct opacity beyond it, though the pupil is less black than in the other eye. Great lachrymation and photophobia. Cannot see the pen held before his eyes; can just discern his fingers. Left eye—well, except the lippitudo above mentioned. Admitted to house. Venesection to $\frac{3}{4}$ x. Pulv. Doveri at night. Warm bath.

6th.—Suffered a good deal from pain in the eye at night—scarify lids. Pulv. Dov. with calomel.

7th.—Rested better; eye about the same. Repeat powder; scarify lids.


15th.—Has remained about the same since the last date. The eye itself is more comfortable, but he suffers severely from pain in the orbital region. The lids have been scarified and the sol. argent. nitrat. occasionally applied with temporary relief to the eye. Yesterday he was directed vin. colchici $\frac{3}{4}$ j. bis in die, and at night vin. colchici $\frac{3}{4}$ j. with tinc. opii $\frac{3}{4}$ ss. He reports to-day to have had a more comfortable night. Repeat prescription of yesterday.

18th.—Patient has continued taking the medicine prescribed till now, with no relief. He suffers a good deal from pain in the head, which comes on at 4, P. M., and lasts till morning. Was cupped to-day $\frac{3}{4}$ iv., with some relief. Gums somewhat ulcerated. Directed to gargle mouth with solution of sulphate of quinine.

19th.—Eye better, but great pain in head coming on yesterday as before. Is directed pills of sulphate of quinine and opium at night.

21st.—Pain in head kept off till 4, A. M., yesterday. Did not get quinine yesterday. Repeat quinine (grains viii. a day) and opiate.

22d.—Headache came on at 9, P. M., and subsided in the morning; now free from it. To take pill of quinine (gr. ij.) at 2, 4, 6 and 8 o'clock, P. M.

23d.—No return of pain in the head or eye; now quite easy. Pupil of right eye very much contracted and elliptical—thus . Take gr. vi. to-day.

26th.—Pain in the head came on last night, notwithstanding the quinine; flushing in face and pain in the eye, also. Cupping from temple $\frac{3}{4}$ iv. Continued quinine to-day.

28th.—The patient has had no return of the pain since the last date, though the quinine was omitted yesterday. His gums continue to be much ulcerated. Repeat quinine to-day.

31st.—Yesterday the pills of quinine were omitted. Some pain in the eye this morning. Pupil much contracted. Cupping $\frac{3}{4}$ iv. from temple.

Feb. 1 and 2.—Patient took the quinine. Was easy.

3d.—Quinine was omitted to-day. A blister was applied.

4th.—Suffered considerably from pain since yesterday. The blister has not drawn. Resume pills.

5th.—Very much relieved since yesterday, which he attributes to the blister and pills. Face much less flushed than usual. Gums much better. R. pills of magnesia (for quinine).

8th.—Has been about the same with the pills of magnesia, as before. Blister behind the ear.

14th.—This patient was discharged to-day—the eye not well and the vision slightly, if at all, improved.

Remarks.—In this case, the disease of the iris was at first complicated with severe inflammation of the conjunctiva of the globe and lids. For some reason, probably on account of the state of the gums, the mercury was not continued for any length of time. About a week after he was first seen, the disease appeared of a rheumatic character. The wine of colchicum was given and continued for some days, when it was observed that the attacks of pain had assumed an intermittent form. Quinine was then substituted with a doubtful effect, though, on the whole, I am inclined to think that it had an influence on these attacks. Probably, on account of this impression on the mind of the patient, the pills of magnesia were substituted for quinine when that medicine was stopped.

Having performed my promise of giving the three cases in which no improvement to vision followed the treatment pursued, I will now add some of the remaining cases, all of which terminated more favorably.

Iritis (double, at different periods).—April 2, 1839. Maria

Kinny, æt. 38. Health has never been very good. Is subject, in warm weather, to "salt rheum." Has had sore throat lately, which lasted several weeks. For some years past, has had weak eyes from time to time. Present attack commenced about four weeks since ; was seized with weakness in left eye without pain ; this continued about three weeks, when she began to have pain in and about the eye ; worse at night, and last night was kept awake by it ; sight scarcely affected. Now, right eye well, except some weakness. Left eye—sclerotic injected, with a purplish hue ; iris darker than in the other eye ; pupil slightly contracted in its (perpendicular) diameter. Pil. submur. (gr. ij.) et opii nocte maneque ; v. s. ad $\frac{3}{4}$ xv. ; foment. tepid. ; L. F. diet.

3d.—No pain after v. s. till this morning ; now, some pain, but less severe than yesterday ; appearance of eye about the same ; thinks sight a little more affected to-day. Apply six leeches to temple.

4th.—Applied leeches with slight relief of pain ; now, still some pain ; much soreness about the eye ; sight less than yesterday ; continue pills.

8th.—Has had much pain in and about the eye since visit ; the sight seemed at one time to be nearly gone in the eye affected ; on the 5th, the mouth began to be slightly affected ; on the 6th, sight began to improve, and to-day is much better. Now, mouth sore ; eye much injected. Cath. senna and salts ; reduce submur. to one grain once a day.

10th.—Eye much improved ; mouth still sore. Reduce submur. to gr. ss. once a day.

May 27th.—Left eye got entirely well about ten days after last visit. Right eye began to be affected about a week since ; has had some pain, but never very severe ; can distinguish objects but very imperfectly with this eye. Now, left eye well. Right eye—conjunctiva generally much injected ; zone of vessels seen around cornea ; iris of a darker hue than in other eye ; pupil seems contracted and somewhat irregular ; slight opacity of cornea. Cath. senna and salts ; liquid farinaceous diet ; pil. sub. mur. (gr. j.) et opii (gr. 1-4) night and morning ; foment. tepid.

30th.—Appearance of eye about the same ; has been tolerably easy, but had some pain in eye towards morning ; thinks the sight to-day is a little improved. Continue pills.

June 3d.—Eye much improved ; injection has nearly disappeared ;

cornea has cleared and vision is nearly restored. Mouth began to be sore the day before yesterday, towards evening, and, on awaking the next morning, found sight manifestly improved. Continue one pill at night.

14th.—Right eye well, except a slight dimness of vision. Continue half a pill every night.

July 15th.—Both eyes well, except a slight weakness. Discharged.

Remarks.—This patient (6th and 7th of the first list) seems to have been of a somewhat strumous constitution. As she was not suffering at the time of the attack, from any complication of struma, I have not included it among the cases in which that disposition could be assigned as a cause, with considerable probability.

The date of the first attack in this case is a little uncertain. The left eye was somewhat affected four weeks before she was seen. There is no proof, however, that the iris was involved till the week preceding her visit. I have, therefore, considered the iritic attack as commencing at that time.

Corneitis—Iritis. (*Single, second attack in same eye after nearly complete convalescence.*)—Dec. 2, 1839. Cyrus R. Woolson, æt. 23. Worker in brass. General health good. Never disease of eyes before, except from getting a piece of steel in left cornea, which still remains. Five days since, while at work, was seized with a sensation in right eye, as if from a foreign substance. This was followed, soon after, with soreness and a sense of swelling in this eye, with weakness, but has had no positive pain. Yesterday, observed that the sight of the eye was affected, objects appearing "misty." To-day, the state of the eye is much the same. Now, left eye well, with the exception mentioned above; right eye suffused; conjunctiva somewhat injected; some small straight vessels seen running from sclerotic to cornea, the former near the cornea, having a bluish tinge in some spots; cornea slightly hazy; iris appears somewhat darker than in the other eye, but the pupil appears regular and acts readily on exposure to light. Cath. sennæ et m. sulph.; pil hyd. s. mur. gr. j. nocte maneque; hirud. vi. to right temple; lotio tepida. (Admitted to house.) L. F. diet.

4th.—Much the same as at last report; pupil, perhaps, rather more contracted. Cupping to $\frac{3}{4}$ iv. Continue other remedies.

6th.—The same. Cupping to $\frac{3}{4}$ iv. Take pill at night only.

9th.—Has had no severe pain since visit, but did not rest well on account of uneasiness, the two last nights. Now, eye much more

injected, especially near cornea, with straight red vessels; cornea still clear, but at lower part is seen an appearance of commencing purulent effusion into anterior chamber. Cupping from back of neck to $\frac{3}{4}$ x. (Admitted to house.)

10th.—Improvement; less injection of eye; effusion in anterior chamber has nearly disappeared; omit pill at night.

11th.—Eye rather more injected; has been nearly easy; cornea clear, but pupil is seen irregular. Hirud. iv. to right temple.

17th.—Has been constantly improving since last report; now, eye in appearance and feeling *well*, except slight weakness on exposure to light. Discharged well, with the above exception.

Jan. 14, 1840.—Reappeared. Says that, five days after last report, went to work, and has continued at work since. Eye has continued weak, and sight not quite so clear as with other eye. Yesterday evening had some pain and soreness in right eye, which continued till he went to bed; no pain since, but some soreness. Now, some irregularity of pupil, with slight appearance of dimness on looking into pupil; sclerotic injected with pink straight vessels at inner and lower part; also, a slight appearance of the same kind at outer part of eye; left eye well; sight of right eye more affected since yesterday. Cath. sennæ et mag. s.; pil. hyd. submur. gr. j. nocte maneq; foment. tepid; liquid farinaceous diet.

21st.—Has been much the same till yesterday; since then, eye more painful. Now, eye more injected; pupil irregular; sight less clear. Cupping to $\frac{3}{4}$ iv. from right temple; continue pill.

22d.—Better; no pain since cupping; less injection of eye; continue pill.

26th.—Omitted pill to-day; same state of eye.

29th.—Uneasiness and injection of eye has nearly disappeared; pupil still ovular, with a clouded appearance; vision much the same; is still taking pills, which he only omitted for one day.

Feb. 1st.—Mouth a little sore; eye much the same. Take one pill a day.

5th.—Pupil more regular; sight somewhat improved; still some injection at inner angle. Continue one pill a day.

6th.—Left house contrary to advice, with some improvement.

Subacute Corneitis—Iritis.—March 12, 1839. Samuel G. Fairfield, æt. 19. Salem. Cooper. Health generally good; never disease of eyes before present attack. Attention was first drawn to left eye by dimness of vision; three weeks since, on looking in the glass,

eye appeared blood-shot. This dimness slowly increased till the last three days, since when it has been about stationary. About a fortnight since, had a trifling pain across forehead and in eye, which has recurred occasionally since, but never severe. Now, right eye well. Left eye—slight injection of fine pink vessels about cornea; surface of cornea roughened, with considerable opacity; iris seems somewhat darker than in the other eye, with slight irregularity. Cupping to $\frac{3}{4}$ v.; pil. submur. et opii, night and morning; liquid farinaceous diet.

14th,—No pain since C. C.; cornea much clearer and sight improved. Has taken cal. gr. ij., opium gr. 1-8, night and morning, by which he has been freely purged; substitute 1-4 for 1-8 gr. opium in pill; continue diet.

16th.—Eye has been easy; sight improved up to yesterday, when pills were stopped; no soreness of gums; says to-day sight remains about as yesterday.

19th.—Sight has gained somewhat for the last three days. Colly. arg. nit. (weak).

20th.—Eye about the same. Resume pills of 14th.

25th.—Mouth slightly sore; sight somewhat improved; one pill every other night.

30th.—Sight has much improved within the last three days; wishes to leave house; continue pill as directed at last report.

Rheumatic Iritis (single).—Dec. 31, 1838. Otis Spurr, æt. 33. Barkeeper. Man of light hair and complexion; of lymphatic temperament; iris of right eye dark blue. Three years ago had an affection of left eye, from which he recovered in a fortnight without treatment. Present disease came on about three weeks since, with redness, intolerance of light and pain in the left eye. From time of attack, has kept in a dark room. Has taken a cathartic; has applied two leeches, and has used Thompson's eye water. No other medical treatment. His food has been much as usual, but not quite so hearty. Now, right eye quite well. Left, universal redness of conjunctiva and sclerotic; no chemosis; cornea transparent; pupil contracted; iris darker than natural; great irritability to light and copious flow of tears on exposure to it; not much pain in the eye to-day; had considerable pain last night so as to keep him awake; vision quite indistinct, so that he cannot see the word "notice,"* or tell the hour

* The letters of which are about two inches in length. Below this word are some lines printed in smaller type, from quarter to half an inch in length.

by the clock. Was cupped $\frac{3}{4}$ j., when he fainted, and it was impossible to proceed with the cupping. The injection of the eye almost entirely disappeared. Cath. sennæ and mag. sulph.; Dover's powder with calomel (gr. j.) at night; rest and liquid farinaceous diet.

Jan. 1, 1839.—Patient is comfortable; less injection of the eye than at first visit; a minute quantity of opaque fluid seen at the bottom of anterior chamber. Continue powder and hot fomentations.

3d.—Eye not so well; soreness of scalp in the night. Hirud. iv. to temple.

4th.—Relieved since leeches; eye less injected; no abnormal fluid in anterior chamber; mouth slightly affected by pills; omit calomel in prescription.

6th.—Much improved.

8th.—Eye not so well yesterday; to-day less painful; more redness of eye than at last date. Blister to back of neck.

10th.—Sleepless nights, ascribed to blister; eye relieved.

12th.—Eye much improved.

14th.—Not so well; some flow of tears, and irritability to light; no pain in the eye; some around it at times. Hirud. iv. to temple.

16th.—Patient improved.

18th.—Was seen to-day; very little, if any redness of the eye remains; the color of the diseased iris nearly natural; vision improved. Omit medicines; to be careful of diet and exposure.

30th.—Patient again seen; the eye quite free from disease; the iris and pupil natural; vision nearly as good as in the other eye.

Remarks.—(9th case—1st list.) The irregular course of the disease in this patient, the soreness of the scalp, and the occasional absence of pain in eye itself, while the parts about it were affected, have led me to consider this case as rheumatic.

Iritis, with Corneitis.—Jan. 16, 1838. William Clark, æt. 24. Carpenter. Health generally good. Three weeks ago thinks he took cold; had toothache, and swelling of left cheek. This swelling remained five days, and went down under the application of mullein leaves dipped in hot spirit. At the end of this time the left eye began to be somewhat red and painful. It remained about the same till within four days, since which time the redness and pain have increased. The last night and the night before he was kept awake by the pain. Now, sees very little with this eye. Right eye well. Left eye—sclerotic injected with pink vessels; zone around the cornea; pupil slightly irregular; iris somewhat darker than in

other eye; a small speck seen apparently on the cornea; no pain now; tongue natural; appetite good; bowels regular. Cupping to $\frac{3}{4}$ x.; pil. cal. (probably of two grains, though this is not stated) and opium, nocte manequē; Dover's power, if pain; foment. tepid; liquid farinaceous diet.

18th.—Thinks the eye less weak since cupping; had no pain in the eye till last night, which was relieved by the powder, and he went to sleep. Thinks he sees a little better; on examination, eye a little less red; slight irregularity of pupil, as above; cornea, perhaps, a little more clear. Continue diet and fomentations; pill night and morning.

20th.—Redness of sclerotic still further diminished; pupil still slightly angular at upper part; speck on cornea gone; still some cloudiness, apparently of aqueous humor; no pain since visit; eye less weak; gums slightly red and tender; sight much clearer; no injection. Take pill in the morning only. R. Ol. ricini, $\frac{3}{4}$ ss.

22d.—Two dejections from oil; still free from pain; redness less; sight about the same; eye still weak; mouth somewhat more sore. Take half a pill in the morning. (Not seen after.)

Iritis (single)—scrofulous constitution.—Feb. 4, 1839. Andrew Shattuck, æt. 23. Had been confined to the house three weeks previous to the 28th ultimo, with a pleuritic affection; on that day went out for the first time, and has continued to do so since. The day before he went out he had his hair cut, but the affection in his eye came on previous to this (that is, he first observed it on waking on the morning of the 27th instant), without any known cause. Now, patient looks rather feeble; has had large scrofulous swellings in the glands of the neck, groins and axillæ. Those of the neck still remain quite extensive and hard.

On examination, left eye well, iris blue. Right eye—injection of conjunctiva throughout; injection of sclerotic with straight pink-colored vessels, terminating abruptly on the edge of the cornea; slight haziness of the cornea, or aqueous humor, giving the iris a duller color than in the sound eye; pupil regular, active; cannot read the whole notice, but sees the word "notice" with this eye; has some pain in the eye, with a feeling as if from a foreign substance under the lids; no photophobia; no increased lachrymation; some adhesion of the lids on waking. Hirud. iv. to temple; P. Dov. gr. x. at night; cerat. simpl. to lids; rest to the eye; light diet.

7th.—Patient has been kept awake at night by the pain in his eye;

to-day more injection of the conjunctiva ; the pupil irregular ; iris more distinctly darker colored than the other, with a slight brownish tinge around the pupil ; to-day cannot read the word "notice." Pill of calomel* and opium at night.

11th.—On the night of the 8th inst. was kept awake by the pain in the eye ; since then has had good nights ; some pain yesterday ; is now quite easy ; mouth slightly affected by the pills ; has taken four pills ; vision improved—can see the word "notice," not the letters below ; no change observed in the appearance of the eye since the last date.

13th.—Eye very much improved ; color of the iris nearly natural ; pupil not yet regular ; very little injection of the vessels of the conjunctiva ; no cloudiness of the aqueous humor ; vision much improved—can almost read the whole notice.

15th.—Eye still much improved ; iris of natural color.

Remarks.—When this patient was first seen (9th day of disease), it was a little doubtful whether the iris or cornea were to be the part of the eye attacked ; two days after, however, the matter was placed beyond a doubt. I would here observe that turbidity of the aqueous humor is a frequent, though not a constant, attendant on iritis, where there is no *demonstrable* affection of the cornea. It is often difficult, if not impossible, to determine whether the slight haziness observed has its seat in the cornea or beyond it.

Iritis (double) in a scorbutic patient.—Feb. 12, 1838. Frederick Pollitz, æt. 25. Seaman. The crew of the vessel in which he has just arrived, have been affected with scurvy ; patient was also somewhat affected, and his gums were slightly swollen and sore.

Present attack commenced three months since, with great pain in the eyes and intolerance of light. This pain has been particularly severe at night, alternating from one eye to the other. Was at sea at the time, and could pursue no treatment. He kept below until about three weeks since, when the ship being short of hands, he was obliged to go on deck. Since then his eye† has been worse. Now, right eye somewhat inflamed ; a zone of vessels seen running towards cornea, not very marked ; no haziness observed ; pupil contracted—very slightly irregular ; iris of blue color, natural ; vision distinct for a few moments. Left eye—conjunctiva much injected ; pupil contracted, slightly irregular ; iris of darker color than in right ;

* Probably of two grains.

† Probably the left.

a slight opacity, or rather turbidity, in anterior chamber; not very painful now, but is so on exposure to light; two nights since suffered a good deal from pain; none last night; has been troubled with adhesion of lids—none lately. Hirud. vi. to each temple; P. Dov. at night; light diet; warm fomentations.

14th.—Increased pain in left eye; slight turbidity in anterior chamber; iris darker than in right; vision has diminished since last visit. In consequence of the scorbutic affection which he had at sea, it was thought better, if possible, to avoid giving him any mercurial preparation, but the continuance and aggravation of the disease renders it necessary. The patient is admitted to the house and is directed Pil. hydrarg. gr. iv. night and morning.

16th.—Has taken the pills as directed; his eye is much relieved; has had no pain; there is less redness; the pupil is, however, much contracted; vision improved.

22d.—The patient left the Infirmary to-day. The eye is well, except a slight irregularity of the pupil and a slight dimness of vision. has sufficient, however, to see to read; no pain in the eye, no redness; not at all affected by light.

Aug. 24, 1838.—The above patient came to the Infirmary to-day. His eyes have been perfectly well since he left; vision perfect; pupils regular; a slight injection noticed of the conjunctiva of lower lids. To apply cold lotions.

Remarks.—This case is on several accounts deserving of notice. The previous duration of the disease was very great. The scurvy, from which he had been suffering, seemed to contra-indicate the use of mercury, which, however, there is strong reason to believe acted very favorably. The affection of the right eye was comparatively slight, and is not alluded to after the first day.

Corneitis, Iritis.—July 1, 1840. Samuel L. Ray, æt. 25. Seaman. Health generally good. One and a half years ago had primary symptoms of syphilis. About three months ago, at New Orleans, had an attack of inflammation of the eye (left) which he thinks was similar to the present. He was there treated by leeches, mercury, &c. Under this his eye got nearly well, and one month since he embarked for this port. On the voyage the ship sprung a leak, and he was exposed to the emanations of bilge water, damaged hides, &c. Many of the crew were attacked with inflammation of the eyes, and his former disease returned with violence. The pain was not severe, but the eye became much injected, and partially blind. It

has continued much in this state ever since. Now, right eye well. Left eye—conjunctiva somewhat injected; a zone of deep red vessels seen around the cornea, with some small straight vessels running in the sclerotic and on to the cornea. Iris darker than in the other eye. Pupil contracted, irregular. Can distinguish people with difficulty at a short distance. Cupping $\frac{3}{4}$ v. from left temple. Cath. sennæ and m. sulph.; pil. s. m. hyd. (gr. j.) nocte maneque. Vegetable diet.

July 3.—Improvement. Less injection of eye. Sight somewhat improved. Continue diet and pill.

Remarks.—This case, though so imperfect, I thought might be interesting, in connection with the preceding. I have therefore given it. There was no reason to suppose it syphilitic, except the occurrence of that disease one year and a half before.

Iritis—Corneitis.—Feb. 3, 1841. Samuel Woodbury, æt. 33. Health generally good. Three years since had inflammation (slight) of both eyes, which lasted about two weeks, and disappeared under the use of a stimulating wash. January the 5th, was seized with inflammation of both eyes, without much pain, which, at the end of ten days, settled in the left. At this time pain became severe in the left eye, especially at night, extending deep and going back over the temple and orbit. The severe pain lasted about two weeks; for the last two weeks has had but little pain in the eye. Now, right eye well. Left eye—conjunctiva injected, the sclerotic also, making the zone around the cornea; cornea hazy. Iris darker than in right eye, with a reddish brown spot at inner and lower edge of pupil; pupil somewhat contracted, irregular. Has had five blisters; three applications of leeches (4, 3 and 3), with temporary relief; and a pill at night seven times. (Has eaten meat as usual.) Can now only see his fingers with this eye. Cupping to $\frac{3}{4}$ vi. Cath. s. and m. s. Lotio frigida. Liquid farinaceous diet. R. Hyd. s. m. gr. ij. to-night, and continue gr. j. night and morning.

4th.—Improvement. Eye less injected. Cornea less hazy.

9th.—Sight somewhat improved. Has been using the other eye, and has some uneasiness in the left. Hirud. iv. to the temple. Continue pills. Mouth slightly sore.

12th.—Sight as at last report. Still considerably injected. Cornea somewhat hazy. Reddish brown patch, as above. Pupil much the same. Cupping to $\frac{3}{4}$ iv. Yesterday, began to take pill at *night* only, as his mouth became slightly sore. Continue the same.

17th.—Some improvement. Mouth rather more sore. Pupil dilates irregularly by stramonium. Continue pill at night only.

22d.—Much as at last report. Omit s. mur.

26th.—Discharged. Improved.

Iritis (single).—March 7, 1842. Thomas Duffie, æt. 52, laborer. Health generally good. One year ago, the left eye was somewhat inflamed, but entirely recovered. Three weeks ago, without unusual exposure previously, he was attacked with redness, weakness, and pain through the left eye, extending to the back of the head. This pain was worse in the *day time*. Is now much abated. Vision is now much affected; can distinguish large objects indistinctly. About a week since he had three leeches applied about the eye, and a small blister behind the ear. Now, right eye well, with the exception of a slight weakness. Left eye—conjunctiva and sclerotic injected. Zone around cornea. Pupil somewhat irregular, contracted. A brownish appearance seen at internal annulus of iris, with a deposit of lymph. R. Pil. cal. (gr. ij.) et opii, night and morning. Liquid farinaceous diet.

Note.—This patient, after a few days, took 1 gr. of calomel at night only. He was discharged on the 14th, without his gums having been made sore, well.

Remarks.—The only peculiarity in this case, was the fact that the iritic pain was worse in the day time, an exception to the general rule. The inflammatory symptoms had so far subsided, when he was first seen, that no depletive measure was thought necessary. His sight, however, was so much impaired, that the mercurial, in considerable doses, was immediately given. A few days after, as the lymph was rapidly absorbing, the mercurial was continued, but in a diminished dose, and less frequently. Under this treatment, at the end of a week, the eye was perfectly restored.

The two following cases are still under treatment in my hands, and with them I shall conclude this paper, which has grown to a size which I did not anticipate when I commenced it, and which will, perhaps, be considered altogether unwarrantable. I may observe in palliation, however, that as I proceeded I came to points which I thought too important to pass without notice and illustration.

It seems to me, that there are few subjects in medicine, to which a *rational* application of the statistical system is better adapted, than the diseases of the eye; and if the feeble attempt which I have made

should induce others to give their results to the world, I shall not have cause to regret the undertaking.

Iritis, Corneitis (double).—Jan. 13, 1841. Alex. Black, æt. 20. Shoemaker. Health generally good. In infancy, had measles, followed by inflammation of eyes, lasting six weeks, but left no lesion. Twenty-five days since, left eye was attacked, without obvious exposure, with uneasiness of feeling without pain (as if from a foreign substance). Next day had severe pain across bowels, followed by pain in back. All this time the pain in eye increased, and on the 4th day had become quite severe. From that time it has been better and worse, but for the last three nights has been pretty easy. For the last two weeks has only seen light. Has been leeches freely, and five days ago was put on a course of mercury, by which his mouth is now affected. Now, right eye, well. Left eye—sclerotic and conjunctiva much injected. Cornea hazy. Iris darker than in right eye. Pupil small, irregular. Continue cal. (gr. j.) nocte. Lotio tepida. Liquid farinaceous diet.

20th.—Did not enter Infirmary. Left eye somewhat improved. On 17th (being then salivated), symptoms of iritis of right eye set in. He was leeches without much effect, and the next day was bled to fainting, with relief of pain. Yesterday, appeared much the same. Had been kept awake partly by blisters, which had been applied to the temple the day before. Was directed 8 grs. of Dover's powder at night, to repeat, if needed. To take pill s. mur. et op. nocte.

Feb. 16.—Has been better and worse since last report. Now, right eye, considerable opacity of cornea. Pupil somewhat closed. Left eye, improved. Begins to have considerable vision. Has had oil of turpentine for two days, without obvious effect. The gums have been kept a little tender, and he is now taking quinine. Apply stramonium daily.

18th.—Vision improving with both eyes. Pupils dilate on application of stramonium. May leave the city. Continue quinine and stramonium.

March 11.—Has somewhat improved in vision since last report. Eyes much stronger. Still has some opacity of cornea. Pupils somewhat dilated from stramonium. Continue stramonium, alter. die.

March 31.—Patient visited me to-day. Eyes have improved considerably since last report, especially the right, with which he can see to read. On examination, irides appear nearly normal. Corneæ

somewhat opaque at centres. Slight remains of zones. Colly. zinc. sulph. (gr. ij.) with vin. opii, ter in die.

April 13.—Since the last visit, he has attempted to resume his occupation, but he found his vision not sufficient to enable him to cut the leather correctly. A few days since he thinks he took cold, and at that time his eyes were painful, and his sight much diminished. Now, sight and appearance of eyes much as at last report. Resume vegetable diet, and apply daily over orbits ung. veratriæ (2 grs. of veratrine to 3j. of cold cream).

Remarks.—The obstinacy of this case, with its tendency to frequent relapses, would afford a strong ground for suspecting it of a rheumatic origin, did not the pain across the bowels and in the back, nearly coincident with the ophthalmic attack, put this matter almost beyond a doubt. I have before (cases 12th and 13th of the first list) alluded to the occurrence of the second attack, during salivation, in this patient.

Iritis (single).—April 6, 1842. David McClintock, æt. 30. Laborer. Health has generally been very good. About three months since he had an attack of pain in the side, with cough, which confined him to the house for three weeks. Never had any trouble in eyes previous to present attack. Eleven nights since, without obvious cause, was taken with dimness of vision of left eye, without pain or redness. The next day had redness, and since then has had occasional pain, more severe at night, but not keeping him awake. Vision is now diminished about one half, as he says. On examination, right eye well. Left eye—conjunctiva and sclerotic much injected. Cornea, clear. Iris darker than in right eye, with a brownish deposition on and between annuli; more marked at inner annulus. Pupil irregular, larger than in right eye. Cupping to 3 ix. Cath. magnes. sulph.; pil. submur. hyd. (gr. ij.) cum opio, nocte manequæ. Lotio tepida. Liquid farinaceous diet.

7th.—No dejection. Repeat cathartic. Continue pills.

8th.—One small dejection from cathartic. Some pain last night. Aqueous humor seems turbid. Eye in other respects much the same. R. Cath. salts, senna and jalap. Continue pills.

10th.—Severe pain through the night of 8th, none yesterday nor now. Vision less. Pupil appears much the same. Cannot distinguish faces. Cath. senna and salts. Six leeches to temple. R. Pulv. Dov. (if pain). Continue pills.

11th.—Freely purged by cathartic. Applied leeches. No severe

pain till 12 P. M. Then took powder, was easier, and at 3 slept again. Gums not sore. Continue pills.

12th.—Slept a good deal without opiate. Eye seems a little stronger. Continue pills.

13th.—Doing well. Sight a little more clear. Eye less injected. Rather less lymph on iris. Continue pills.

14th.—Much the same. Sight as yesterday. Continue pills.

15th.—The same. No change in vision since 13th. Take three pills a day.

16th.—Says he sees better. Continue three pills a day.

17th.—Sight a little clearer. Continue pills.

18th.—Vision still improved. Injection of eye diminished. Pupil not so large as when last reported, but of good size; irregularity still great, but changed in its form. Take two pills a day.

19th.—Sight much improved; can see to read common print at six inches distance from the eye. Gums observed to be slightly red and swollen. On strictly questioning him, he says that they began to be tender on the 16th, and have now become a little more so. Omit pill. Apply about the eye the extract of stramonium.

21st.—Applied stramonium the day before yesterday; none since. Pupil still smaller than on 18th, with the same irregularity. Can see to read at the distance of more than a foot. Gums as at last report. Re-apply stramonium.

22nd.—Pupil more regular; larger, probably from the effect of the stramonium. Sight still somewhat clearer. Continue stramonium.

24th.—Pupil more regular. Reads at more than two feet. Continue applications.

29th.—Much the same. Still some lymph at inner edge of pupil. Resume pill to-night and to-morrow night.

May 1.—Improved. Reads at more than a yard from the eye. Slight remains of injection. Continue pill every second night.

Remarks.—This case I have already referred to in the early part of this paper, as an instance of iritis with dilatation, instead of contraction, of the pupil. There was no evidence of any complication on the part of the retina, to explain this occurrence. Contrary to what usually happens in this disease, the pupil contracted as convalescence advanced.

The improvement of vision commenced before the gums were affected. This improvement, however, had not been very striking, and for two days had been arrested, when on the 10th he reports his

vision again improved. No examination of the gums was made at that time, but three days after the gums were found evidently though not severely affected by the mercury. I questioned the patient closely as to the day on which he first observed this effect, and found, on referring to my notes, that it corresponded exactly to the date of the last improvement.

This case affords an instance of what is frequently alluded to by writers on iritis, namely, the difficulty of determining, in some cases, when the mercury should be stopped. This medicine, which was omitted on the 19th, was resumed on the 29th, as the absorption of the lymph for some time had gone on very slowly, and the vision for five days had remained much the same. The resumption of the pill was followed by renewed improvement, and when I last saw him he considered his eye nearly well. I thought it best, however, as there were still some remains of the old effusion, to continue the calomel at 2 grs. every second night.

It should be noticed, that owing to the unfinished state of this case, it was not included in the analysis of treatment given above. For the same reason, I omitted it under the head of complications. It is, therefore, to be added to the number of cases in which none existed.

I have subjoined the following analytical table, which may not be without interest, notwithstanding the imperfection of some of its details.

ACUTE IRITIS.

NAME.	Age.	Duration of disease before treatment.	Complication.	Eye attacked.	Loss of Vision.	Amount of Pain.	Pain more severe at night.	Zone or Sclerotic Infection.	Discol. of Iris, or visible Lymph.	Irregularity of Pupil.	Contraction of Pupil.	Date of Improvement of Vision after treatment commenced.	Cause.
John Dow.	50	2 wks.	None	Right	Great	Great	1	1	1	1	Not ment.	None	Unknown
Wm. Clarke.	24	16 days	Slight Corneitis	Left	do.	do.	1	1	1	1	do.	4th day	Cold
Sam'l Fairfield.	19	3 wks.	do.	do.	Slight	Slight	Not ment.	1	1	1	do.	2d day	Unknown
Louisa Blood.	19	1 wk.	Severe do.	Right	Great	Great	1	1	1	1	do.	None	Scrofula
Cyrus Woolson.	23	5 days	Sl. Cor.—Hyp.	do.	Slight	Slight	1	1	1	1	1	About 12th d.	Unknown
do. 2d attack.	"	1 day	None	do.	Great	Great	Not ment.	1	1	1	Not ment.	22d day	do.
Maria Kenny.	38	1 wk.	do.	Left	do.	do.	1	1	1	1	1	4th day	do.
do. 2d attack.	"	1 wk.	do.	do.	do.	do.	1	1	1	1	1	3d day	do.
Sam'l Ray.	25	1 *	Slight Corneitis	do.	Considerable	Considerable	Not ment.	1	1	1	1	2d day	do.
Sam'l Woodbury.	33	29 days	Severe do.	do.	Great	Great	1	1	1	1	1	6th day	Unknown
Catherine Ray.	31	1 month	do.	do.	Not mention'd	Slight	Not ment.	1	1	1	1	Well on 6th d.	do.
Mary Hoogs.	68	do.	Chemosis	do.	Great	Great	do.	Not ment.	1	1	1	Well on 7th d.	do.
Thomas Duffie.	52	3 wks.	None	do.	do.	do.	Worse in d.	1	1	1	1	Not mentioned	do.
Daniel Symmes.	31	Uncertain	Cor., Ectropium	do.	Not mention'd	Considerable	Not ment.	1	1	1	1	Well on 6th d.	do.
James Campbell.	30	1 wk.	None	do.	Considerable	Great	1	1	1	1	1	Well on 7th d.	do.
Frederick Pollitz.	25	3 months	do.	Right	None	do.	1	1	1	1	Not ment.	Not mentioned	Small Pox
do. do.	"	do.	do.	Left	Great	do.	1	Not ment.	None	1	1	Well (no date)	Rheumatism
Margaret Gates.	24	5 days	do.	do.	Slight	do.	1	do.	1	1	1	3d day	Scurvy
Otis Spurr.	33	3 wks.	Hypopium	do.	Great	do.	1	1	1	1	do.	7th day	do.
Henry McDivat.	40	3 or 4 wks	None	Right	do.	do.	1	Not ment.	1	1	Not ment.	None	Unknown
Andrew Shattuck.	23	7 days.	do.	do.	do.	do.	1	1	1	1	1	7th day	Rheumatism
Betsy Cowden.	53	3 wks.	Corneitis.	Left	do.	Not mention'd	Not ment.	Not ment.	1	1	Not ment.	None	do.
Oliver Goodrich.	48	2 wks.	None.	do.	do.	Great	1	do.	1	1	do.	7th day	Scrofula
Wm. Sabine.	19	4 wks.	do.	do.	Considerable	Slight	1	do.	1	1	do.	Not mentioned	Vaccination
Martha Tuttle.	20	5 wks.	do.	do.	do.	Great	1	do.	1	1	do.	5th day	Unknown
Alexander Black.	20	25 days	Sev. Corneitis	do.	Great	Great	1	1	1	1	do.	Unknown	do.
do. 2d attack.	"	†	do.	Right	do.	do.	1	1	1	1	1	Not mentioned	Rheumatism
David McClintock.	30	11 days	None	Left	do.	do.	1	1	1	1	Pupil dilat.	7th day	do.
													Unknown

* Relapse after an attack three months before.

† Attacked during treatment of the left eye.

‡ Varied, sustained improvement on 19th day.

§ Improvement coincided with the mercurial affection.

|| Exposure at sea to unwholesome emanations.

Exact date not known.

Reviews.

I.—*Recherches Cliniques sur la Meningite des Enfants.* Par
ALFRED BECQUEREL.

Clinical Researches upon the Meningitis of Children. By ALFRED
BECQUEREL.

THE above interesting monograph, by Alfred Becquerel, an interne of the Children's Hospital in Paris, has now been for some time before the public. As we are not aware that it has ever been translated, or that any very full analysis of it has been published, we propose to give some of its results in connection with the results of our own observation in private practice.

Within a few years, diseases of the brain have undergone a great change, as regards our knowledge of their pathological conditions, and many points in their course and results have been made more clear, which were before exceedingly obscure. The nosological arrangement of them was formerly based upon symptoms, or hypothetical causes of symptoms, and where post-mortem examinations failed to verify what the previous symptoms according to such arrangements would have indicated, it does not seem to have attracted the attention which it demanded. The symptoms have now, however, been examined more carefully in connection with the pathological changes, and attempts made to classify them according to the textures in which lesions have been found, and according to the different nature of these lesions. Abercrombie, among English writers, and Coindet, Lallemand and others upon the continent, have greatly narrowed the terms used by former writers, and added new which designate more accurately the exact nature of the diseases. Later still, Guersent, Gerhard, Green, and several internes in the Children's Hospital in Paris, have added most valuable facts to our knowledge of these diseases as they exist in children—particularly with reference to the connection of meningitis with tubercular disease. This does not seem to have been observed by former writers. Even Abercrombie, many post-mortems as he saw, and carefully as he apparently attended to them, did not notice this fact, or did not give it

the importance of which later observation has shown it to be worthy. He gives but one case of granulations upon the membranes, and only remarks upon it, that it was a rare phenomenon. Dr. Green says that it constitutes at least one fourth of the diseases of the brain in children. Becquerel, out of 30 cases exhibiting the symptoms of meningitis, found these granulations in 28. Of six autopsies which we have seen, it existed in four. While these granulations were regarded only as one of the results of inflammation, and of trifling importance apparently in comparison with more obvious lesions, it is more reasonable to suppose that they were overlooked, than that they have lately become a more frequent phenomenon. Senn, who wrote in 1824, calls them infiltrated pus, and regards them as a lesion only of the last stage of the disease.

Becquerel's paper is based upon 17 cases, carefully collected and analyzed, together with 10 cases which he did not analyze, observed during a year's residence as interne in the Children's Hospital in Paris. The cases are analyzed strictly upon the numerical system, and so far as they go are of proportional value.

Pathological Changes.—The dura mater in none of the cases observed by Becquerel, nor in those observed by ourselves, exhibited any signs of disease.

Arachnoid.—In 5 cases out of his 27, Becquerel found slight effusion into the arachnoid cavity, and in all cases it coexisted with effusion under it and into the lateral ventricles. We have not seen effusion into the arachnoidal cavity in any case; on the contrary, there has always been a remarkable degree of dryness of both surfaces. Becquerel places very little importance upon this circumstance. He has met with this effusion in various other diseases, where there were no symptoms referring to the head. He has twice found adhesions, which were evidently due to old disease. They were around tubercles which existed in the brain just beneath the pia mater.

Pia Mater.—The pia mater is the part which is of principal interest in connection with meningitis, since it is in this membrane the granulations have always been found, which are supposed to be tubercle, or at least to bear the same relation to tubercle that the granulations of the serous coat of the pleural and peritoneal cavity in chronic disease of these parts are generally allowed to bear to it. These granulations vary in size and appearance. They are of a rounded form, generally opaque, but sometimes semi-transparent, varying from the size of a pin point, when they scarcely

appear more than a defined opacity of the membrane, to the size of one-third of a line, when they are prominent and present a very appreciable roughness to the touch. Becquerel describes them as granular when crushed between the fingers, and leaving a residue resembling crude tubercle. We have never seen them so large as to admit of this method of testing them. Becquerel had them submitted to chemical analysis, when they presented the same constituents and in the same proportions as tubercle. Under the microscope they presented only a mass of irregular globules, without signs of organization.

The most common seat of these granulations is the fissure of Silvius. In every case where we have found them at all, we have found them here; and Becquerel gives, as a general rule, that when found elsewhere, they will also be found here. Sometimes they are single, and scattered at wide intervals. At others, they are grouped so thick, that for half an inch square in the fissure of Silvius, we have seen at least two-thirds of the surface of the membrane covered with them. Where the pia mater dips between the convolutions, they are often found very numerous; and where the adjoining membranes have become adherent, as they commonly do in this case, it is difficult to determine to which they belong, or whether they are not in the substance of the brain, especially if there are tubercles in the substance immediately in contact with the membrane, which we have once seen. When numerous in the fissure of Silvius, the arachnoids and pia mater frequently become involved in one mass by the adhesions and the lymph thrown out, so that it would be impossible to say to which the granulations belonged, were it not that always when we find them so situated that we can determine this point, they are always found in the pia mater. They are often found at the base of the brain, about the origin of the optic nerves. Becquerel says that he has seen them twice upon the surface of the cerebellum. We have no record of having seen them here, and do not recollect to have observed them in this situation.

The evidence of the connection of this disease with tubercle is very strong. Of the 30 cases which Becquerel had met with, these granulations were found in 28. The two cases in which they were not found were the only two in which tubercles did not exist in some other organ. Of six cases, in which we have made examination of other organs as well as the head, in four there were granulations in the membranes. The two in which there were none,

were the only cases in which there were no tubercles in the other organs.

Becquerel does not suppose that these granulations constitute the anatomical character of meningitis, but that they exist before the acute or chronic disease which gives rise to the symptoms, and of which we almost always find sufficient evidence in the effusion of fluid or deposition of lymph upon the diseased part. They have been found in phthisis, where they gave rise to no symptoms. Behier found tubercles in the brain in four cases out of ten in meningitis, and three times in phthisis, where they gave rise to no symptoms. We have never examined the head of a child that died of phthisis. We have minutes of one case of phthisis in an adult, in which lymph was found in the fissure of Sylvius without granulations, and in which severe headache was a prominent symptom at the close of life. Although probably having little to do with the production of the symptoms, there is every reason to suppose that it has much to do in bringing about that state of things which does give rise to the symptoms. And if there were any circumstances which would facilitate in distinguishing at the access, those cases in which they do exist from those in which they do not, we should modify much our prognosis, and feel a greater confidence as to when our interference might or might not be available. The early history of the patient, the family history, the probable existence of tubercles in other organs, should all enter into our estimate of the chances of recovery. We have seen one case in which all the symptoms existed, even to blindness and coma, so far as they could be determined in an infant, in which the patient yet recovered. This, with like cases, which have been not unfrequently reported, show that the prognosis upon the ordinary symptoms need not necessarily be fatal. While there is strong reason to believe, although it would be impossible to found the belief upon fact, that where the disease has its origin in tubercle, the patient never would recover.

What part the effusion of fluid into the ventricles takes in the production of the symptoms or the result, is difficult to determine. In the cases which we have recorded, there was from one to two ounces of fluid in the ventricles. Of Becquerel's 27 cases, in 18 there was no fluid in the ventricles. They all died with coma, which has by many been regarded as the symptom indicating the occurrence of effusion.

Becquerel gives some results of experiments arrived at by Guillot,

which he was allowed to see, but which had not then been published, of which the following is the sum. That during life the ventricles are always distended with fluid. That this fluid diminishes in proportion to the time after death at which we make the examination, and that the fluid which has disappeared from the ventricles will be found in the substance of the brain. That the substance of the brain is capable of absorbing its own weight of water. Experiments made by Magendie led to the same results. These are interesting facts to be considered in connection with the question, but are not sufficient to account for the disappearance of the fluid after death, if its presence during life is necessary to the production of any of the symptoms which are regarded as characteristic of the disease. Becquerel found in many of his examinations, although at long intervals after death, the parietes of the ventricles of their natural firmness. In three of the cases which we have examined, the parietes of the ventricles were of sufficient firmness. In three, some portion of them was softened. Senn does not consider a moderate distension of the ventricles as a lesion, because it varies much in health under different circumstances; and it is only when there are two or three ounces that he would regard it as a pathological circumstance.

In one case which we have examined, there were no signs of any other disease than the granulations. In all the rest, the marks of acute disease were sufficiently evident. In some cases it consisted merely in a general opacity, with slight thickness of the pia mater, and adhesion to the substance of the brain. Where it was more advanced, there was effusion of lymph, adhesion to the arachnoid, and where two surfaces of the pia mater were in contact, firm adhesion with more or less thickening. We have never seen any effusion of pus. Becquerel found it in several cases,—most frequently upon the convexity of the hemispheres. The lymph will not necessarily be found, when it does exist, only where the granulations are. But it will generally be found most abundant there. In both the cases in which no granulations were found, the principal part of the disease was around the origin of the optic nerves, and upon the pons varolii. In one case it consisted in the effusion of lymph infiltrated with serum. In the other, in the effusion of lymph, adhesion, and thickening of the membranes so as to form one membrane more than a line in thickness. Of the degree of thickening of which these membranes are capable, even without the effusion of lymph or apparent disorganization, we not long since met with an example in

an adult who died of chronic inflammation of the investing membrane of the left lateral ventricle. On the optic thalamus the membrane was thickened to a full half line, and was firm like cartilage. More or less effusion of serum or deposition of lymph at the base of the brain, is a common circumstance in all cases of meningitis, whether there are granulations there or not. Becquerel found tubercles in the substance of the brain in five cases of meningitis; twice in the cerebellum, twice in the cerebrum, and once in both. We found them in one case only. Then there were several; all in the cerebrum; most in the grey portion; a few in the white, on the verge of the grey. In all the cases which we have examined, we have found the substance of the brain as firm, and in some cases firmer than natural, with one exception; the circumference in many cases presenting a flattened appearance, as if the rounded surfaces of the convolutions had been subjected to a considerable pressure. In the excepted case there was limited, but very distinct softening of the substance of the brain in contact with the diseased membrane. Becquerel has several times seen softening of the brain in contact with extensive disease of the meninges. We have seen it also, in a case which would not properly come under the head of meningitis, in which it coexisted with other very extensive disease of the brain.

The softening of the parietes of the ventricles, which sometimes amounts to fluidity, and resembles curdled milk, Becquerel regards as a post-mortem change, due to the absorption of the fluid in the ventricles by the brain. In two cases of softening of the parietes of the ventricles which we have seen, the softening was in the posterior horn, where, from the position of the body after death, one would expect it, were it owing to this cause. But in the other case it was in the anterior horn of one ventricle, and confined to that ventricle in which there was the least fluid,—one ventricle containing an ounce and the other half an ounce. We do not remember that there was any difference in the character of the softening in the different cases. If there was, we made no minute of it. Our general impression with regard to them all—and we remember to have remarked it at the time with regard to some—is that it appeared as if the substance of the brain had been exposed to maceration.

With regard to the lesions in other organs, little of importance has been found, except the invariable existence of tubercles in some of them, where granulations are found in the membranes of the brain.

In some of the cases they were few, in the lungs and bronchial glands, just sufficient to mark the diathesis of the patient. In one case there were small cavities in the lungs, although previous to the access of acute disease of the brain, there had been no symptoms indicating disease of these organs.

We have in one case found a post-mortem perforation of the stomach. Gerhard, in a paper published in the Philadelphia Journal of 1836, dwells strongly upon the importance of an observation of the lesions of the stomach in connection with this disease. He has found, he says, unequivocal lesions in six out of ten detailed cases, and in four-fifths of other cases. Becquerel thinks more lightly of it. In twenty-seven cases there was only a slight softening in seven. From Gerhard's statements of what he regards as disease, it might admit of a doubt, whether what he calls unequivocal lesions were altogether unequivocal, and whether the frequent symptom of vomiting did not lead him to exaggerate slight apparent changes, post-mortem or not; at all events, the cases of Becquerel, which were apparently collected with equal care, do not correspond. With regard to our own cases, although the stomach in most of them was examined, the examination was not made with sufficient care with reference to so minute points as to be of any value.

The ages of the patients which are reported by Becquerel and Gerhard, ranged from one to fifteen years, much the largest proportion occurring between the ages of two and five years, inclusive. It is to be remembered, however, that all their cases were collected at the Children's Hospital in Paris, where they probably had no opportunity of meeting with the disease in older subjects, none older being admitted. We have seen the disease once in a patient twenty-two years of age. It was a case well characterized by the symptoms during life and the pathological phenomena after death. The other cases which we have seen were from eighteen months to ten years.

To give a detailed history of the disease would be tedious as well as useless, since it has been so vividly done by many writers upon the subject. But we will give the prominent points in one case which we have witnessed, because it is a fair specimen of its kind, and exhibits distinctly the symptoms which have been most dwelt upon as pathognomonic of the disease.

C——, a girl 10 years of age. She had never been a robust child. She suffered much during infancy and teething from diarrhœa, and has since been subject to occasional attacks, as the mother observes all

her children have been. She rarely had cough. She lost a sister two years previous of tubercular meningitis, of whom we made an autopsy. We saw her for the first time, May 1st. During the winter she had had one of her attacks of diarrhœa. For two months previous to our seeing her, she had had almost constant headache, with only occasional relief; frequent nausea and vomiting, with indifferent appetite in the intervals; but was bright during most of the day, and about her occupations and amusements as usual. For ten days before we saw her, she had obstinate constipation, with increase of headache, referred to eyes and forehead. She did not give up until four days previous to our seeing her, since when the vomiting had been constant. At that time her aspect was heavy; mind clear; pulse natural; teeth dry; thin white coat on tongue; and with her obvious symptoms, appeared more like typhus than anything else. The next day her symptoms were more characteristic. Her face more flushed; her upper lip swollen; her memory defective; although when her attention was confined, her mind was sufficiently clear. Objects at the foot of the bed were double, while near her they were single. She had an uneasy sensation in her legs, which rendered it impossible, she said, to keep them still. She could not keep her eyes open nor shut together, but was alternately opening and shutting them. Her bowels had been opened by medicine. The day following there was strabismus and dilatation of the pupils. Her mental faculties were in the same state as the day previous, and continued so till two days before her death, when raving delirium occurred and continued to the last. She had always stuttered, but during the early part of her attack, the defect was less remarkable than usual; but afterwards became so much worse, that she could scarcely utter a word. She complained often during her illness of pain and tenderness at the epigastrium. Her headache, after occasional remissions and returns, at this time left her. The constipation became again obstinate, and continued so. The pulse, which at the beginning had been natural, gradually increased to the last, when it was 136. She had no convulsions. Her aspect during the last days was typhoidal. She died eight days from the time when we first saw her, and ten from the time when she was first confined. Granulations were found upon the membranes of the brain in the fissure of Sylvius, tubercular disease in the lungs, and a post-mortem perforation of the stomach.

In this case were present early the headache, vomiting, and consti-

pation, which at this period, with reference to the other symptoms, have been considered as the most characteristic signs of the disease. The case might for the first week have passed for any thing else, as well as for fatal disease of the brain. And even till the last day or two, the disease was not sufficiently characterized by what are called the common symptoms, to cut off all hope of recovery. For a week it appeared not unlike typhus. The friends did, and so would probably many practitioners have referred the symptoms to worms. She passed a large strongylus during her illness. The headache, which had been constant but remittent, and the vomiting, which had been frequent, but with intervals, and the costiveness, which, before the acute attack, would not have been a very obvious symptom to the friends, without close inquiry might not have come to the knowledge of the physician, while they would have been sufficient, when his attention was first called to the child, to have cautioned him in his prognosis. It presents also the other symptoms, which Dr. Green considers of equal importance, as an early diagnostic sign, viz.: the slow pulse in proportion to the other symptoms at the access of the acute attack, and its gradual increase in the course of the disease to its termination, when it was more rapid than at any other time.

These symptoms are not always all present in every case of the disease, nor do they always occur in exactly this same order. Becquerel met with vomiting in twenty out of twenty-seven cases; constipation in twenty-three out of twenty-seven; and headache in fourteen out of seventeen cases; while in the pulse, he places much less value than Dr. Green. It varied in every respect in the different cases. But their occurrence in so large a proportion of the cases, and the occurrence of so decided and persevering symptoms, without in most cases the signs which usher in other acute diseases, renders them exceedingly valuable in the diagnosis. Headache and vomiting, although common symptoms in the access of all acute disease, both in adults and children, rarely last beyond the access. They will generally yield to the first active treatment. While in meningitis, they generally continue with greater or less severity till the occurrence of more distinct cerebral symptoms, till what has been called by most writers the 2d stage of the disease. Where they occur with pneumonia, we may have the physical signs to aid us, the cough and auscultation. In the eruptive fevers, the eruption and high febrile symptoms, which rarely appear at this period of meningitis. Where

they occur with abdominal disease, some distinct abdominal symptoms, which lead our attention to these organs. But with these, the diagnosis is more difficult, and in the absence of the characteristic signs referring to either, or their presence referring to both, the appearances are entirely deceptive.

With typhus, it is perhaps more likely to be confounded than with any other disease. The early symptoms are very similar. The state following them is very like the first week of typhus, and the raving delirium, followed by coma, often resembles very nearly the last stages of the worst cases of typhus; so nearly, that with our present knowledge we cannot always distinguish them. But in such cases, the early history of the attack, the state which had just preceded it, and the general history of the patient with that of the family, together with the age, if carefully taken into the estimate, will often greatly assist in determining our diagnosis. Obstinate constipation, which will not yield, except to the most active cathartics, is almost never a symptom of typhus; a greater or less degree of laxity is the more common state of the bowels. The headache in typhus, although often the first indication of disorder, rarely precedes by any length of time distinct febrile symptoms; while in tubercular meningitis it often precedes by weeks and months, almost always by some days, the constitutional affection. If there is anything which leads us to suspect a tubercular disposition, it is an important circumstance to be considered. The age is important. Tubercular meningitis is not a common disease in adults. It is rather peculiar to children. Typhus belongs principally to the middle periods of life.

We regret that our author has not more definite knowledge to afford us upon the treatment. His remarks are sufficiently judicious. But they do not furnish us with anything which may not be found in almost every treatise which has ever been written upon the subject. Neither do his *Researches* give more certainty to one practice than another. Indeed, a Parisian Hospital would be hardly the place in which to study therapeutics in the diseases of children. Facts upon this subject would be received with some little hesitation from such a source. But from the clearness and conciseness with which the history and pathology of this disease is drawn up, we would recommend this little book to the perusal of our readers, as well worthy of the time they may bestow upon it.

II.—*On the Diseases and Derangements of the Nervous System, in their primary forms, and in their modifications by Age, Sex, Constitution, Hereditary Predisposition, Excesses, General Disorder, and Organic Disease.* By MARSHALL HALL, M.D., F. R. S. Lon. and Edin., &c. &c. Octavo. Pp. 380. London. Baillere. 1841.

DR. HALL's first memoir on the nervous system, in which he brought forward his own discoveries, was published in the year 1833. The views contained in this and in subsequent publications, from their novelty and importance, excited at once the attention of the active and the curious. There were some who were disposed to deny Dr. Hall the claim of originality, and who tried to prove that he had been anticipated by other authors. Dr. Hall alludes to these criticisms repeatedly in the work before us, and we are sorry to see that they have dwelt so much on his mind. The truth has prevailed in this case, as it will do in all cases, and those who at first could not detect the great merit of our author, have since acknowledged that "his discovery ranks with that of Sir Charles Bell in anatomy and physiology, and is of still greater value in its relation to pathology and therapeutics, whilst it constitutes the third great era in the history of neurology." And that this opinion is but just to Dr. Hall, will at once appear probable in this country, where he has long been known as an accurate observer of truth, and a man of originality and genius. We propose to consider the book before us not so much as a treatise on the diseases of the nervous system, as a statement of Dr. Hall's views of the anatomy and physiology of that system, and an application of these views to pathology. We find in the following tabular view, some of the most interesting points in our author's system.

TABLE OF THE NERVOUS SYSTEM.

- I. The entire nervous system is divisible into
 - I. The Cerebral.
 - II. The True Spinal.
 - III. The Ganglionic.
- II. The Cerebral System is
 - I. The seat of the $\psi\upsilon\chi\eta$ or soul, and
 - II. The System of

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|---|---|------------------------|
| 1. Sensation and of the Senses. | } | Mixed Functions. |
| 2. Volition and of Spontaneous Motion. | | |
| 3. Sleep and Fatigue. | | |
| III. The True Spinal System. | | |
| I. The Principle of Action is the <i>Vis Nervosa</i> . | | |
| II. Its Modes of Action are excited and reflex or direct. | | |
| III. The Reflex Functions are those of | | |
| 1. Ingestion and Retention. | } | the Rectum. |
| 2. Egestion and Exclusion. | | |
| IV. The Direct Functions are | | |
| 1. The Tone, | } | Of the Muscular Fibre. |
| 2. The Irritability, | | |
| IV. The Ganglionic System. | | |
| I. The Principle of Action is the <i>Vis Nervosa</i> . | } | Mixed in Oesophagus ; |
| II. The Mode of Action excited, direct or immediate. | | |
| III. The Functions those of | | |
| 1. The Internal Muscular Organs. | | |
| 1. The Heart and Arteries. | | |
| 2. The Stomach and Intestines. | | |
| 2. Nutrition. | | |
| 3. Secretion, &c. | | |
| V. The System of the Emotions; these are | | |
| I. Psychological Affections, acting through | | |
| II. The True Spinal, and | | |
| The Ganglionic Systems. | | |

We notice, in the first place, Dr. Hall's division of the system as new and peculiar. It has been usual to speak of the cerebro-spinal system, as the great central nervous system. But, in the tabular view just submitted, the cerebral system is placed by itself, and of course distinct functions are assigned to it. To it are referred sensation and volition; sleep and fatigue belong to it exclusively. A very distinct order of phenomena are referred to the spinal system. Its functions are those of ingestion and retention, of egestion and exclusion. Here we ask, but what is meant by all this, on what grounds has this division been made. The author refers us to the following experiments for an answer. A frog is placed on the table. On pinching it, we have proofs that it is endowed with sensation. On threatening it, we are convinced beyond all doubt that it has volition. The spinal marrow is divided, so that the limbs of the animal are no longer connected with the cerebral system, and we per-

ceive, at once, that sensation and volition are withdrawn from them. The animal, however, continues to breathe, and on irritating the integument of a leg, the muscles contract. These phenomena again cease, if the spinal marrow be destroyed. Motion can no longer be excited, for the excito-motor nervous centre no longer exists. But, to go to an experiment on an animal of a higher rank in the zoological series. A horse was struck with an axe over the anterior lobes of the brain. The animal fell instantly, was convulsed, and then remained motionless. It shortly began to breathe, and continued to do so freely by the diaphragm. Now, in lacerating or pricking the animal, it was motionless, manifesting no evidence of sensation or volition. On the other hand, when the eye-lash was touched with a straw, the eyelid was forcibly closed by the action of the orbicularis muscle. When the cornea was touched, the eye-ball rolled outwards by the action of the abducens. When the verge of the anus was touched, the sphincter contracted forcibly; the tail was raised, the vulva was drawn towards the anus. And, on the destruction of the medulla oblongata, these phenomena were no longer exhibited. In this experiment, as in the other, the influence of the brain being withdrawn from the system, sensation and volition are lost. But, motions of the eye-lid and of the sphincter ani take place on excitement, as long as the spinal marrow remains, all excito-motory phenomena ceasing with its destruction. Let us now go to the human subject.

“I have this day (January 3, 1841) seen, with Mr. Duffin, a case of the most complete hemiplegia, of sensation and volition, of the left side, without loss of intellect, and with the perfect continuance of all the reflex actions: respiration, deglutition, the action of the sphincter ani, are unimpaired, and on tickling the left side of the cheek, the patient complained, and the left shoulder was forcibly agitated. On tickling the palm of the left hand, the arm and fingers were moved, but without consciousness. On tickling the sole of the left foot, the extensors of the toes, and especially those of the great toe, were strongly contracted, still, without consciousness. The same effect was produced by applying a metallic spoon, just taken out of cold and of hot water; the extensors of the toes retained their contracted condition, whilst our visit lasted.” Now, how are these phenomena to be interpreted, as the nervous system was formerly understood and divided. Sir Charles Bell has shown, that, connected with the cerebro-spinal nervous system, were nerves of sensation and

of motion, the latter answering to the former as a stimulus. But in these experiments, motion was excited when sensation did not exist. No adequate explanation of this was afforded, until Dr. Hall brought forward his excito-motory system of nerves, referred to the spinal marrow as a centre, and though connected with the brain, shown to be independent of it, and distinct from sensation and volition. The word sympathy had been the resort of those physiologists, who had noticed any phenomena similar to those exhibited in the experiments which have just been detailed. Whytt, indeed, spoke of contractions excited through certain sensations, showing by the use of this word, that in his own mind, he was thinking of some cerebral influence, and that the views now brought forward by Dr. Hall had never occurred to him.

But the difficulty experienced by physiologists, in consequence of the admission of only two nervous systems, the cerebro-spinal and the ganglionic, is also evident, when we consider further some of the phenomena of the above-mentioned experiments. We have seen that respiration continued when the organs of that function were no longer connected with the brain. Legollois had shown the same fact by numerous experiments. He had satisfied himself, that the nervous centre of this function was in the medulla oblongata. Here, Dr. Hall agrees with him; but then Legollois supposed that there, too, was the cause exciting the activity of the different parts concerned in this function, whilst Mayo and Wilson Philip maintained that the will presides over it. Dr. Hall, appealing to the well-known facts, that acts of inspiration are excited on the application of cold to the face and chest, or of ammonia to the nostrils, tells us that this takes place through the nervous filaments distributed to those parts and to the lungs; that here an excitement is produced which is followed by the motion of the appropriate agents. At the same time that he thus refers respiration to the excito-motor nervous system, he admits that it is affected by the will. He considers it then a mixed function. Under certain circumstances, the influence of the will is withdrawn for a time, as in sleep, or when the attention is absorbed, as in the engraver, the student, the apoplectic patient; and in these cases the respiration is more or less irregular, and audible, or noisy and stertorous. On the other hand, when we divide the pneumogastric nerves, the respiration becomes cerebral, and, to quote from Magendie, "*L'animal parait y donner une attention particuliere.*" In the following tabular view, we see what Dr. Hall considers to be the excitors and what the motors of this function.

I. The Excitors.

1. The Trifacial.
2. The Pneumogastric.
3. The Spinal.

II. The Med. Oblongata.

III. The Motors.

1. The Spinal accessory.
2. The Intercostal.
3. The Diaphragmatic.
4. The Lower Spinal.

In this connection, we may notice a query of our author's, whether carbonic acid, in the air cells of the lungs, and in contact with the fibrille of the pneumogastric nerves, be an exciting cause of inspiration. He adduces the celebrated experiment of Hook, given in a very early volume of the Transactions of the Royal Society, in which a stream of atmospheric air was driven through the trachea of the lungs, and incisions made through the pleura, in a living dog; the animal made no effort to inspire whilst this stream was continuous; but when it was interrupted, the efforts of inspiration were violent and convulsive. Thus, it was only when the air respired became charged with carbonic acid gas, that efforts at inspiration were made. Then, too, this principle affords an explanation of the proportion always maintained between the number of pulsations of the heart and of respirations. The evolution of carbonic acid is greater, in proportion to the rapidity of the circulation; and if the carbonic acid itself be the exciting cause of inspiration, the act will be repeated more or less frequently as the circulation, and with it the evolution of carbonic acid, is more or less rapid.

But our limits will not allow us to dwell any more on Dr. Hall's views, as applied to respiration. To take a very different function, that of generation, which is considered by him to be more purely under the control of the spinal system. Here, as before, his merit consists not so much in bringing forward new facts, as in the explanation and connection of phenomena previously known. Thus, many cases of erection of the penis, each time the catheter was introduced into the urethra of patients with injury or disease of the spinal marrow, are on record; the fact of the unconsciousness of the patients, both of the contact and of the effect of the instrument, having also been noted. There are experiments by Legollois and others, where emission of the semen took place in decapitated animals. Brachet relates that a patient, whose legs and the lower quarter of whose abdomen were completely paralyzed, became the father of two children. Ollivier gives an instance of very easy parturition, in a paraplegic woman. We know, too, of cases where a foetus has been expelled from the womb, after the cessation of respiration. Brachet

has proved by experiment, that conception will take place in dogs and rabbits, whose spinal marrow has been divided. He infers from this that these functions are independent of the cerebro-spinal system. Dr. Hall, with great propriety, sees in them a proof only that the influence of the brain is not necessary to the function. In all the cases that have been mentioned, the organs of generation are still connected with the spinal marrow, and the function ceasing when the spinal marrow is destroyed, it must be referred to the spinal system. These phenomena, also, are most clearly excito-motory, or, in other words, the activity of the organs is excited by a stimulus applied directly to them.

But the great importance of Dr. Hall's spinal system, and its extensive application to the functions of the animal economy, are most clearly shown in the following tables, one of the anatomy, the other of the physiology, of the true spinal system.

TABLE OF THE ANATOMY OF THE TRUE SPINAL SYSTEM.

I. The Incident, Excitor Branches.	II. The True Med. Oblongata and Med. Spinalis, the Centre of the System.	III. The Reflex, Motor Branches.
<ol style="list-style-type: none"> 1. The Trifacial, arising from, <ol style="list-style-type: none"> 1. The Eye-lashes. 2. The Alæ Nasi. 3. The Nostril. 4. The Fauces. 5. The Face. 2. The Pneumogastric, from, <ol style="list-style-type: none"> 1. The Pharynx. 2. The Larynx. 3. The Bronchia. 4. The Cardia — Kidney, and Liver. 3. The Glosso-Pharyngeal. 4. The Posterior Spinal, arising from, <ol style="list-style-type: none"> 1. The General Surface. 2. The Glans Penis vel Clitoridis. 3. The Anus. 4. The Cervix Vesicæ. 5. The Cervix Uteri. 		<ol style="list-style-type: none"> 1. The Trochlearis } Oculi. 2. The Abducens } 3. The Minor portion of the Fifth. 4. The Facial distributed to <ol style="list-style-type: none"> 1. The Orbicularis. 2. The Levator Alæ Nasi. 5. The Pneumogastric or its Accessory. <ol style="list-style-type: none"> 1. The Pharyngeal. 2. The Laryngeals. 3. The Bronchial, &c. 6. The Myo-glossal. 7. The Spinal, distributed to the <ol style="list-style-type: none"> 1. Diaphragm, and to 2. The Intercoastal & } Mus- 3. The Abdominal } cles. 8. The Sacral, distributed to <ol style="list-style-type: none"> 1. The Sphincters. 2. The Expulsors, Ejaculators, the Fallopian Tubes, the Uterus, &c.

TABLE OF THE PHYSIOLOGY OF THE TRUE SPINAL SYSTEM.

I. The Excited Action.

1. Of the Eyes, the Eye-lids ; (and of the Iris ?)
2. Of the Orifices, } 1. The Larynx.
 } 2. The Pharynx.
3. Of the Ingestion.
 1. Of the Food.
 1. In Suction ;
 2. In Deglutition.
 2. Of the Air, or Respiration.
 3. Of the Semen, or Conception.
4. Of Exclusion.
5. Of the Expulsors, or of Egestion.
 1. Of the Fæces ;
 2. Of the Urine ;
 3. Of the Perspiration ;
 4. Of the Semen ;
 5. Of the Fœtus, or Parturition.
6. Of the Sphincters.
 1. The Cardia.
 2. The Valvula Coli ?
 3. The Sphincter Vesica.

II. The Direct Action or Influence—

- I. In the Tone, } Of the Muscular System.
- II. In the Irritability, }

We now understand what Dr. Hall means when he assigns the functions of ingestion and retention, of egestion and exclusion, to the spinal system. Incident and motor filaments are distributed to all the outlets and inlets of the animal economy. We have seen that they preside over the admission of air to the lungs. Deglutition is effected through them. Muller had shown, that if an incision be made into the neck of a living animal, and the finger passed into the pharynx, it is immediately grasped forcibly, and that the same event occurs in a young animal, even after decapitation. M. Flourens relates, that an animal, in whom the cerebral lobes have been removed, will not eat ; but that as soon as any body touches the pharynx, it is swallowed. Mr. Mayo speaks of the act of deglutition as instinctive and irresistible. These phenomena, however, were first referred by Dr. Hall to a nervous system, independent of sensation and volition.

and through which, on the application of stimuli to the part, appropriate motions follow.

The following experiment, so far as we know, is peculiar to Dr. Hall.

“ If, in a turtle, after the removal of the tail and the posterior extremities with the rectum, and, of course, with a portion of the spinal marrow, water be forced into the intestine, by means of Read’s syringe, both the cloaca and the bladder are fully distended, before any part of the fluid escapes through the sphincter, which it then does on the use of much force only, and by jerks. If, when the cloaca is distended, the integuments over it are stimulated, the water is propelled to a considerable distance. The event is very different on withdrawing the spinal marrow ; the sphincter being now relaxed, the water flows through it at once in an easy, continuous stream, with the application of little force, and without inducing any distention of the cloaca. Here, again, we have a most remarkable instance of the action of one of the outlets of the body, the brain being entirely removed, on the application of a stimulus to the part itself.”

But, besides the excited reflex actions of the spinal marrow, Dr. Hall attributes to it a direct action. The irritability and the tone of the muscular system are referred to it. To show this, Dr. Hall performed the following experiment on frogs. The spinal marrow was divided below the origin of the brachial plexus, and a portion of the ischiatic nerve of the right posterior extremity was removed. The left posterior extremity, being now pinched with the forceps, moved energetically, whilst the right leg was motionless. After the lapse of several weeks, the muscular irritability of the left posterior extremity was gradually augmented ; that of the right was diminished, the irritability being tested by slight galvanic shocks passed through water. The connection of the tone of the muscular system with the spinal marrow, is shown by the following experiment. Two rabbits were taken ; from one, the head was removed ; from the other, also, the head was removed, and the spinal marrow was cautiously destroyed by a sharp instrument ; the limbs of the former retained a certain degree of firmness and elasticity ; those of the second were perfectly lax. On the following day, the limbs of both were equally rigid, owing to the contraction of the muscular fibre from its irritability.

But, besides these functions of the spinal system, Dr. Hall has endeavored to assign to it its principle of action. The *vis nervosa* is considered by him to be this principle in the ganglionic as well as in

the true spinal system. At the same time, he speaks of the cerebral system as the seat of the soul. Now, we had supposed that the attempt to find out the precise manner in which the spiritual and the corporeal, the soul and the body, were united, had been abandoned, that the subject was acknowledged to be too mysterious for human comprehension. And we are sorry, that in a book containing so many interesting facts, so much just interpretation, there should be found so gratuitous a supposition. And what do we gain when we say, that the *vis nervosa* is the principle of action of the spinal system? Do we understand any better the subject? Experiments, indeed, show us that only in parts connected with the spinal marrow, can muscular contractions be excited on the application of stimuli. Destroy the medulla oblongata, and the animal ceases to breathe; but we do not see that Dr. Hall has advanced anything to prove, or even to render it probable, that "there exists a nervous force or power, which can be said, in its reflected and direct operations, to be to the nervous, what the blood in its circulation is to the vascular system." We must object, then, to the expression as not of fact, but of theory, and as serving to conceal our ignorance rather than to advance our knowledge. At the same time, we would allow, that when Dr. Hall speaks of this *vis nervosa*, as acting in a retrograde as well as in a direct manner, a truth is deduced which has not been always acknowledged. Many writers have asserted, that communications through the spinal marrow are effected from the upper towards the lower part only. Dr. Hall's experiments, however, clearly show that this is not so; for on irritating the spinal marrow of a decapitated turtle, besides sudden motions in the posterior extremities and in the tail, slower and more continued movements took place in the anterior extremities.

Dr. Hall makes some practical applications of these physiological principles, which are important as well as interesting. Thus, in insane patients who refuse to eat, the use of a stomach tube is sometimes necessary. Dr. Hall has substituted for this, and with success, a pharyngeal tube, on the principle that the excitor nerves of deglutition are distributed to the pharynx, and that the morsel, being conveyed to that spot, deglutition will always be excited and take place. But when this is done, we must avoid the soft palate, the posterior part of the gums and of the tongue, to which are distributed branches of the trifacial, which are exciters of vomiting, and this may be done by the introduction of a small tube along the floor of the nostril, the

patient's mouth being closed all the time. In this connection, Dr. Hall introduces three cases, where a feather introduced into the mouth to excite vomiting, has been swallowed. The persons had introduced it too far, beyond the parts to which are distributed exciters of vomiting; the exciters of deglutition were appealed to, and the feathers were carried into the œsophagus, beyond the reach of the fingers. But cases of this kind are not singular.

“The other extremity of the alimentary tube presents us with a phenomenon of a similar character. The action of this part of the animal frame is highly peculiar; after the expulsion of its contents, the large intestine has, through the medium of the internal sphincter and the levator ani, an inverted action; and an instrument, introduced for the purpose of relieving the intestine, has been suddenly grasped, snatched from the fingers of the operator, and drawn up into the rectum and colon.”

In the same manner the female catheter has been suddenly drawn out of the fingers of the surgeon into the cavity of the bladder. Three such instances are detailed by Dr. Hall.

Another fact in this connection is, that when hemorrhoids are so protruded that no force of pressure can replace them, the sphincter may be relaxed by the effort usually made on going to stool, and the tumor easily returned. And, pain felt in the rectum soon after going to bed, apparently from pressure of the sphincter on an internal hæmorrhoid, has been relieved in the same manner.

A treatment of choking, based on these same views of an excitomotor system, is also recommended by our author.

The danger in these cases arises, not from a mechanical pressure on the larynx and trachea, but from a reflex action closing the glottis. The remedy must be immediate. Pressure being made on the abdomen to prevent the descent of the diaphragm, a forcible blow should be made by the flat hand on the thorax. The effect of this is, to induce an effort similar to that of respiration; the larynx being closed, œsophageal vomiting takes place, and the morsel is discharged.

Having dwelt thus much on physiology, let us see how Dr. Hall applies his peculiar views to pathology, and how far they can assist us in attempts to understand and explain the complicated phenomena which are there presented. And, to begin with the pathology of the spinal system, our author gives us the following tabular view of it.

TABLE OF THE PATHOLOGY OF THE TRUE SPINAL SYSTEM.

I. Diseases of the Incident Nerves.

I. 1. Dental 2. Gastric 3. Intestinal	} Irritation in Infants.	{ 1. The Crowing Inspiration. 2. Strabismus, Spasm of the Fingers and Toes ; Strangury ; Tenesmus ; &c. 3. Convulsion. 4 Paralysis ?
II. 1. Gastric 2. Intestinal 3. Uterine	} Irritation in Adults.	{ I. Hysteria. II. Asthma. III. Vomiting ; Hiccup ; &c. IV. Epilepsy. V. Puerperal Convulsion ; &c.

III. Traumatic Tetanus.

IV. Hydrophobia, &c.

II. Diseases of the Spinal Marrow itself.

- I. Inflammation and other Diseases.
- II. Diseases of the Vertebræ and membranes.
- III. Counter-pressure, &c., in Diseases within the Cranium.
- IV. Centric Epilepsy.
- V. Centric Tetanus.
- VI. Convulsions from Loss of Blood, &c.

III. Diseases of the Reflex or Motor Nerves.

- I. Spasm.
 1. Spasmodic Tic.
 2. Torticollis.
 3. Contracted Limbs, &c.

II. Paralysis.

We see, in the above table, how many pathological phenomena are referred, by Dr. Hall, to this system of incident and reflex nerves connected with the spinal marrow as a centre. It has always been recognized that convulsions occur in many cases where there is no reason to suspect during life disease of the central organs, and where, at the autopsy, the brain and the spinal marrow appear to be perfectly healthy. In the convulsions of infants, in puerperal convulsions, physiologists knew hardly how to account for them, and the brain was said to sympathize with other organs. These cases, as considered by Dr. Hall, are perfectly intelligible. As many of the healthy actions of the economy are excited by stimuli applied to the extremity of excitor nerves, many morbid phenomena will be determined by undue stimuli which irritate, applied in the same way. Thus, tetanus is, in most cases, a disease of nervous extremities ; epilepsy is often so. But these cases are divided by Dr. Hall into two classes ; those, where there is irritation of the excitor nerves,

are considered as centripetal, whilst all cases where there is a lesion of the nervous centres, are called central. And in epilepsy this distinction is very important for prognosis and for therapeutics. If the affection be of the extremities of the nerves, we may hope to remove the causes of it; whilst in a case of central epilepsy, a recovery is much less probable.

But, though epilepsy be in the first instance an affection of the spinal system, the central system is soon involved. We have seen that the inlets of the body are under the control of the spinal system; when, then, the incident nerves are unduly irritated, those distributed to the glottis are apt to be so. This does not take place in hysteria, and here is the difference between hysteria and epilepsy, where, the glottis being closed, respiration is not properly effected, the circulation of the brain is interrupted, consciousness is lost, and in this way, even some lesion of the central organ may be produced. Thus, the sudden application of cold water to the face, by exciting an act of inspiration, opening the glottis, has saved a patient from an epileptic attack. The following case, from Denman's work on Midwifery, quoted by Dr. Hall, is to be explained in the same way.

“In a patient in convulsions who had been bled, and for whom many other means had been fruitlessly used, I determined to try the effect of cold water. I sat down by the bedside, with a large basin before me, and a brush of feathers. She had a writhing of the body and other indications of pain, evidently occasioned by the action of the uterus, before the convulsions; and when these came on, I dashed, with some force, the cold water in her face repeatedly, and prevented the convulsion. The effect was astonishing to the bystanders, and indeed to myself. On the return of the indication of pain, I renewed the use of the cold water, and with equal success, and proceeded in this manner till the patient was delivered, which she was, without any more convulsions, except once, when the water was neglected.”

Dr. Hall also cites us instances of the localization of remedies; one case in which strychnine acted upon the glottis; the other, in which cantharides had as undoubted an effect on the sphincters of the bladder.

“A lady, aged 35, being in Lausanne in September, 1836, consulted a foreign physician there, who prescribed the strychnine; I do not know the dose; I only know that it was afterwards dimin-

ished to one-tenth of a grain thrice a day. Two pills were taken at bed-time and three the next morning; soon after which the patient was taken with spasm about the muscles of the larynx, and those of one arm. She felt as if strangled. With much effort she mixed some eau de Cologne with water, 'snapped at it,' and so swallowed it. She was shortly relieved. The dose of strychnine was repeated between breakfast and noon. The same symptoms were renewed; she felt and looked as if strangled. The muscles on each side of the larynx became tense like cords; she was again relieved by eau de Cologne, which she took hastily as before. Tracheotomy would be the proper remedy in a case of necessity.

"A young lady, aged 27, had a fatty tumor within the tenth and eleventh dorsal vertebræ; it gradually, but completely, severed the spinal marrow, and induced perfect paraplegia. The bladder lost its power of retention; but on giving a dose of tincture of cantharides, the power of retaining the urine was restored for a time. The power would cease and again be restored on suspending or repeating the medicine."

In all these cases we see instances of morbid reflex function, and in parts particularly subject to the spinal system. Dr. Hall cites, also, the croup-like convulsion of children, as a disease that could not be understood until the system of incident and reflex nerves connected with the spinal marrow, was brought forward. This disease had been referred to the cerebrum by Dr. Clarke, who first detected it, and by Dr. Ley to compression and consequent paralysis of the pneumogastric and its recurrent nerves. Dr. Hall considers it as an affection of the true spinal or excito-motory system. It may originate in the trifacial nerve, as in teething, or in the pneumogastric, as in over or improperly fed infants; or in the spinal nerves, as in constipation, intestinal disorder, catharsis. These nerves through the spinal marrow excite the recurrent of the pneumogastric, the intercostals, the diaphragmatic. But, besides dental, gastric and intestinal irritation, there are other exciting causes acting on the nervous centres, as passion, vexation, and even the state of sleep would seem to predispose to attacks of this kind of convulsion, as very often the attacks come on in sleep, or on immediately waking from it. The premonitory and the early symptoms belong to the excito-motor system. Thus strabismus, a clenched fist, the thumb inserted into the palm of the hand, and later, the glottis closed, as indicated by the spasmodic inspiration. Sometimes this difficulty of breathing

comes on without any warning, and with it the cerebral symptoms occur which are noticed in epilepsy, as the distortion of the eyes and face, the foaming at the mouth, the convulsions of the limbs. The countenance is livid with venous blood, there is perfect coma, and there may be sudden dissolution. Dr. Hall shows that this disease cannot originate in the brain, for it is too sudden in its attacks, it is differently affected by remedies from diseases of the brain; those diseases do not give rise to the peculiar crowing inspiration of this affection, and, whenever there has been an opportunity to inspect the central organs, they have been found free from lesion. This disease has been referred to an enlargement of the thymus gland. But as similar symptoms occur where there are no enlarged glands, and as pressure on the pneumogastric nerve would induce paralysis and a constant, not a sudden and transient effect, this opinion is not tenable. And this view of Dr. Hall points out clearly certain therapeutic indications, of the successful following out of which he gives several cases. Thus, attacks are to be prevented by avoiding what we have seen to be the exciting causes, dental, gastric, or intestinal irritation, passion, disturbed sleep. If an attack be threatened, the gums are to be lanced, indigestible substances are to be removed from the stomach, the bowels to be evacuated. In the suspended respiration, the excitors of the function must be appealed to; cold water may be dashed in the face, the nostrils may be irritated. And, to guard against the effects of the attacks, the blood-vessels about the head may be depleted, an alcoholic lotion may be applied.

Dr. Hall takes this occasion to recommend strongly the use of the gum lancet in that condition of infants designated as teething. The process of dentition—the formation, ascent and growth of the teeth, is compared to the similar process in the growth of the horn of the deer, which is attended by augmented vascular action and augmented temperature. The object should be then to relieve the over-acting vessels, and by dividing them and encouraging the flow of blood, the tumefaction and the pressure on the nervous tissue is diminished. The following case of paralysis from dentition occurred in the family of a medical friend of Dr. Hall.

“M. A. G——, æt. twenty months, has been suffering for some time from dentition, being fretful, and having a cough during the night. This morning, April 30, 1835, her mother observed that she was incapable of raising her right arm; she retained the power of swinging the arm backwards and forwards, and bending the fore arm

on the arm, but had not the least power to raise the arm itself, as if the deltoid muscle only was paralyzed. On examining the arm, the child suffers no pain, and there is not the least reason to believe that any accident could have occasioned this loss of power. The general health of the child in other respects is excellent; appetite good. Dr. Hall, on seeing the child, recommended a gentle emetic, followed by a dose of castor oil; the gums over the four eye teeth, which are all coming forward, to be carefully lanced every second day; and alternately an embrocation to the arm, and a light, mild diet. May 7th. Little alteration in the state of the arm. Castor oil followed by free and healthy evacuations; gums have been lanced, but teeth do not advance; last night fits of coughing, resembling the convulsive crowing of croup. Two leeches to the back of the ear; the same treatment to be continued. May 14. No return of crowing cough, and the child has regained some power of raising the arm. 21st. She daily acquires more the use of the arm. Aug. 20. The child has been for some time in the country, and has perfectly recovered the use of her arm. The four teeth quite through, the health very good."

Similar symptoms to those in some of the cases which have just been detailed, are found in other affections. The closure of the larynx in hydrophobia, and its effects, were noticed by Dr. Physick, who proposed tracheotomy. In the act of deglutition, in the effort to vomit, on the contact of a drop of water or a crumb of bread, on the attempt to inspire carbonic acid, we have the healthy exercise of these parts. But, besides the morbid excitability of the nerves of the larynx, we sometimes find difficulty of respiration, or asthma, from a morbid excitement of nerves distributed to the trachea. The following case will be found interesting in this connection, as related by Dr. North.

"In the year 1797, whilst I was on duty at Quebec, I became subject to an asthmatic affection, that came on almost every day for some months. It was at first very slight, there being only a sense of weight and fulness on the left side of my breast, together with some little difficulty in breathing. These symptoms attacked me sometimes in the day, sometimes in the night, and frequently continued for two or three hours. Having obtained leave of absence, I embarked about the end of July, 1799, for Great Britain. Soon after my arrival in London, I went to the theatre. The evening was remarkably warm, and the house unusually crowded. These circumstances rendered my respiration more than commonly difficult,

and produced a greater degree of irregularity in my pulse than I had ever before experienced. To these symptoms was superadded a more troublesome cough than had ever before occurred ; and at the last, such a difficulty of breathing came on, as obliged me to retire. On arriving at my lodgings, I found myself so extremely ill, that I went to bed with very little expectation of living till the next morning. During the night my respiration was very laborious, and my cough so exceedingly troublesome, that I slept very little. In the morning, when I attempted to get out of bed, the cough came on with such violence, that after many severe fits of it, I was, through fatigue, obliged to throw myself on the bed, with my face downwards. In this position I remained some time, coughing occasionally with great violence, and spitting from time to time a considerable quantity of phlegm into my handkerchief. Perceiving accidentally that there was something very hard in my handkerchief, I was induced to examine it ; and dividing it with my knife, I found that it was a large shot, about the eighth of an inch in diameter. The cough and expectoration were lessened immediately, and in about ten or twelve days it disappeared. The sense of weight and fullness in my chest likewise went off, and my pulse became regular. From that time to the present I have felt no uneasiness similar to what I experienced before the discharge of the shot. I recollect that previously to my experiencing any uneasiness in my chest, I was one day seized, immediately after drinking hastily the last glass of a bottle of wine, with a convulsive cough, which continued to be very troublesome for several days."

Dr. Hall devotes several pages to a consideration of the act of vomiting, as a reflex spinal action. The nerves of the pharynx have been considered by Professor Muller to be those through which vomiting may be excited, but Dr. Hall proposes the following experiment to prove that the branches of the trifacial distributed to the fauces are the excitors of this act. Let the fauces be touched with the ivory handle of a knife, an incipient act of vomiting will immediately be induced. Let the knife be carried backwards so as to touch the posterior part of the pharynx, nothing of the kind will take place. But vomiting also occurs through the excitement of other nerves, as through the pneumogastric on the administration of an emetic, or from the presence of a gall stone, or of a renal calculus in the economy. In the vomiting of early pregnancy or dysmenorrhœa, a spinal nerve is the incident excitor nerve. The excitement of these nerves is conveyed to the medullua oblongata, through which

and through nerves distributed to the œsophagus, stomach and larynx, the combined action of the different parts concerned in vomiting takes place.

Dr. Hall does not admit the correctness of the two opinions respecting the mechanism of the act of vomiting which have divided physiologists. He considers the acts of coughing and vomiting to be produced by the same mechanism. They are both acts of expiration. In both the expiratory muscles are violently contracted. In coughing, however, the larynx is only momentarily, in vomiting it is permanently closed. Magendie has proved that the contraction of the stomach itself is not necessary to the act of vomiting. But if, on the other hand, this act were effected by a contraction of the diaphragm, it must be attended by inspiration, in which case the fluids ejected from the stomach would be drawn into the larynx. Dr. Hall cite a case from the Dublin Hospital reports, where, in a patient who died of phthisis and who had vomited repeatedly, the stomach occupied the lower part of the left thoracic cavity. Here, certainly, the evacuation of the stomach could not have been caused by any pressure of the diaphragm, or by any influence of the abdominal muscles. And the following experiments, tried by Dr. Hall, go to substantiate the correctness of his views. An opening was made into the windpipe of a dog, and a few grains of the sulphate of mercury were administered. The first efforts to vomit were attended by a forcible expulsion of air through the opening in the trachea. It was only when the efforts became violent, that the stomach yielded a part of its contents. Again, a free opening was made into the right thorax of a dog, between the sixth and seventh ribs. The lung collapsed partially. During the first efforts to vomit, air was expelled through the orifice; as the efforts were greater, a portion of lung was driven through the thoracic opening with violence, and, at the same instant, the contents of the stomach were thrown off.

At the same time that Dr. Hall appeals to these experiments, he admits that the act of vomiting is not simply an act of pressure, for were it so, it would be easy at any moment, and under almost any circumstances, to evacuate the stomach. The cardiac orifice must be freely opened before vomiting takes place; to effect which, however, the diaphragm should be in a relaxed rather than in a contracted state. There are facts, too, to show that the œsophagus is concerned in vomiting.

But we must leave this subject to go to a very different one, the condition of muscular irritability in paralytic limbs. A good deal of discrepancy of opinion on this subject has prevailed amongst medical writers, some maintaining the muscular fibre in paralytic limbs to be irritable, and others asserting the contrary. Through Dr. Hall's division of the nervous system, and his distinction between the cerebral and the spinal system, these discrepancies may be reconciled. Here, as elsewhere, Dr. Hall illustrates his meaning and sustains his position by experiment. The spinal marrow of a frog is divided below the origin of the brachial plexus. Voluntary motion is now confined to the anterior extremities. But the posterior extremities, on pinching the toes, move energetically. The right sciatic nerve is divided, and the right posterior extremity becomes entirely paralytic, both with reference to spontaneous and to excited motions. Strychnine being administered, the anterior extremities and the posterior extremity, in connection with the spinal marrow, become affected with tetanus, the other posterior extremity being flaccid. Thus we see that in paralysis of voluntary motion from an interruption of communication with the cerebrum, muscular irritability remains; but in paralysis of a limb from interruption of the communication of the limb with the spinal marrow, the power of motion of the limb, its muscular irritability, is lost. These same phenomena obtain also in the human frame. In a hemiplegic patient, whose face also was paralyzed, a slight galvanic shock was passed through the muscles of the two sides. Those of the paralytic side were the most affected. In two other patients, where the facial nerve was injured, a light galvanic shock was passed through the fibres of the orbicularis. It was now the muscle of the healthy side which was affected, the eye-lid of that side being closed, whilst that of the paralytic side gaped as before. In two cases of paralysis of the arm, one hemiplegic, the other the result of dislocation of the shoulder, the muscles of the former were more, those of the latter less, irritable than those of the healthy arm respectively. In two cases of paralysis of the lower extremities, one cerebral, the other from disease within the lumbar vertebræ; in the former, there was augmented, in the latter, diminished irritability. In this connection, Dr. Hall refers to the fact that the remarkable effect of strychnine to excite muscular contractions, is more easily excited and is more manifest in the paralytic than in the sound limbs of hemiplegic patients. And from all this he urges the importance of a more careful and discriminating use of the word paralysis, that the

paralysis of voluntary be always distinguished from that of excited motion. At the same time, we have a means of diagnosis between cerebral and spinal disease.

The influence of emotion in paralytic limbs is shown in one case observed, and in one quoted by Dr. Hall. The first patient was a man forty-three years of age, who had been seized with hemiplegia at the age of twenty-four. He had partially regained the use of the leg, scarcely at all that of the hand and arm. Whenever this patient is excited, as by meeting an acquaintance, he squints, his hand and arm are contracted and convulsed in the most extraordinary manner; whenever he coughs, the leg is thrown involuntarily upwards.

The chronic rigid contraction of the arms and hands in cases of hemiplegia of long duration, according to Dr. Hall, is owing to the principle of tone constantly acting upon muscles now possessing augmented irritability, whilst they are never, or rarely, relaxed by acts of volition. In idiots, where the influence of volition is wanting, that of the spinal marrow, the source at once of the tone and of the irritability of the muscular system, is in constant action, and induces chronic contraction. This is to be distinguished from spasm, which is excited immediately by some disease of the spinal marrow itself.

In our author's physiological views, we have seen that he demonstrates by experiment that excitement or irritation can act through the spinal marrow as well from the lower towards the upper portion of the column, as from the upper to the lower. In the following case, cited by Dr. Hall from Mr. Stafford's work on the spine, the same fact is shown.

“A man fell from the top of a wagon load of hay; he had struck his back upon the second, third and fourth lumbar vertebræ, which were considerably displaced laterally, the body leaning to the right side, leaving but little doubt that the spine at that part had suffered fracture. He was perfectly paralyzed below the injury; the fæces escaped involuntarily, and the bladder could not expel its contents; the arms, likewise, were partially paralyzed, in both the powers of feeling and motion. His present state is as follows: the muscles of the right arm are so contracted that it is closely fixed to the side; the fore-arm, from the same cause, rests on the humeral part; the wrist is bent on the fore-arm and the fingers are firmly clenched in the palm of the hand; the sense of feeling is partially lost; the left arm is affected in the same manner, but not in so great a de-

gree ; the right leg has both the power of motion and feeling ; the left leg has the power of feeling, but not that of motion ; the sphincter muscle of the rectum remains paralyzed, the fæces still escaping involuntarily, and the bladder only expelling half its contents.”

It is not merely as an instance of morbid action excited through the spinal marrow and from the lower part to the upper, that this case is recommended by our author to his readers as worthy of their attention. He strives to impress on them the importance of a careful observation of all the phenomena in cases of disease of the nerves, or of the central nervous organs. Here are points in the case just cited which cannot be explained. To the study of these, in diligent observation and careful comparison, Dr. Hall invites, by his own example. What is the condition of the reflex actions, what are the retrograde influences of the spinal marrow and nerves? If there be these retrograde influences of the spinal marrow, we must not always conclude that disease or injury is situated above the origin of the nerves affected. There is a vast field of observation. And we think that no one can read Dr. Hall's book without being struck with the vast material for study and thought which it affords. On the whole subject of the pathology of the nervous system, a subject so intricate and so obscure as to deter rather than to invite the inquirer, Dr. Hall has shed a new light, and, in the example of his own successful labors, he presents a great stimulus to exertion.

We have already said that the book before us is not, and does not profess to be, a thorough and well digested treatise. The field of observation where Dr. Hall has labored is too vast to be thoroughly explored by one man. Our author has devoted himself for some years to its exploration, and in the book before us, he tells us of what he has seen, and in what connection the various phenomena appear to him to stand. In our notice of his labors we do not pretend to discuss all the subjects brought forward in the book. It would not be possible to do so within the limits of an ordinary article. But we would commend the book itself as worthy of an attentive perusal. In the chapters where the phenomena of the cerebral and those of the ganglionic system are more particularly considered, there is much that is new and interesting, not merely to the physiologist, but also to the practising physician. The consideration of this we must defer to another opportunity. And this we hope to have ere long, for Dr. Hall speaks of another work as forthcoming, which is to contain also the results of subsequent researches.

Bibliographical Notices.

I.—*Massachusetts Library of Practical Medicine. Brodie on Diseases of the Joints.*

THE Committee of Publications of the Massachusetts Medical Society have selected for distribution, in the Society, the present year, being the twelfth volume of the Library of Practical Medicine, the fourth edition of Sir Benjamin Brodie's Treatise on Diseases of the Joints. Our medical literature furnishes few examples of a work published under such advantages, or possessing so much practical value as this. The first edition was issued twenty years ago, and was the result of the author's personal observation; and has ever since been esteemed as a standard work of the highest authority. It has undergone a thorough revision, so that on a comparison of the last with the earlier editions, many parts of it appear to have been entirely re-written, and every part to have undergone a thorough review and re-consideration. The fruits of the distinguished author's enlarged experience for another twenty years of mature and active professional life, are thus embodied in it. The changes and additions are most observable in the practical directions for the treatment of the several diseases. We doubt not the members of the Society will receive the work with satisfaction; and none the less, that the mechanical execution of the work is worthy of its intrinsic merits.

II.—*Guide du Médecin Praticien, ou Résumé Général de Pathologie Interne, et de Thérapeutiques. Par F. L. I. VALLIEX.* *Guide for the Medical Practitioner, &c.*

THE title of this work expresses with sufficient distinctness its character. It is the object of the author, divesting himself of all prejudice and preconceived opinions, to give the accumulated evidence of medical science, so far as it can be gathered from periodicals and treatises of all kinds, upon the history, causes and treatment of

those diseases which fall within the sphere of the medical practitioner. It is intended to be a strictly practical work ; to enable the practitioner, when in doubt, or necessitated to make a hasty examination of a particular disease, to place his hand upon the spot where he will find all that the history of medicine has given of practical utility, relating to it. Our author has commenced his work with the diseases of the respiratory organs, and in the first two numbers, which we have before us, treats of epistaxis and coryza. The space which he has devoted to these subjects is indicative of the thoroughness proposed in the undertaking, and if carried out, must extend it much beyond 6 vols. of 600 pages, the limits which the author has laid down for himself. We should doubt the ability of any single man to prepare such a work with the completeness which is requisite to render it of the highest value. The immense amount of research which it must require, the difficulty of always getting at the necessary materials when wanted, and the interference of other pursuits, we should fear, would make it one of those labors commenced never to be finished according to the plan originally projected. The character and ability of the author, as exhibited in his works which are already before the public, are the best recommendation which could be furnished of the work which he has now in hand. If persevering industry and fidelity to himself could ensure the successful completion of the project, it would no doubt be accomplished. We only question whether it is not a work more likely to be well done by many men than by one.

Scientific Intelligence.

EXTRACTS FROM THE REPORTS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

MARCH 24, 1842. Dr. STRONG exhibited a specimen of exceedingly fatty liver, taken from a child seven months old. For a short time it was nursed by its mother ; but, owing to some irregularity in its bowels, which was supposed to be occasioned by the bad state of health of the mother, who was suffering at the time from sore mouth and other difficulties, it was transferred to another nurse. This proving of no benefit, it was weaned. The bowels, notwithstanding, continued in a bad state. The appetite, however, was voracious. It appeared well nourished, bright, and was precocious in its intelligence. A month since, the child began to be sick at the stomach. The discharges became very frequent, eighteen or twenty a day, and, for the most part, of bloody mucus. The abdomen became full and firm, and the child presented all the symptoms of cholera infantum. Treatment, of various kinds, had not the slightest influence upon the disease. During the last fortnight, the liver was observed to increase greatly in size. The child died of pneumonia. At the autopsy, there was found hepatization of a portion of one lung. There were no tubercles. The mesenteric glands were slightly enlarged. The liver was fatty and greatly enlarged, occupying nearly one half the abdomen.

Two months ago, the only other child of the family died, two years of age. It had never been a healthy child. It had always been troubled with an irritable stomach, and subject to irregularity of the bowels. During the winter it had scarlet fever, from which it was convalescing, had begun to take food, and the attendance of the physician was remitted. Suddenly it was attacked with diarrhœa, and the same symptoms as the other child, under which it sunk and died. In this case, also, the liver was found greatly enlarged and fatty. The mother is a feeble woman, has always been more or less deranged in her bowels, and evidently has now some chronic abdominal trouble.

Dr. HOLMES said that a man, from out of town, lately called upon him, who had suffered from an acute attack, which the physician who had attended him, regarded as pleurisy. It had passed off, but left him with some equivocal chronic trouble, which had occasioned anxiety, and induced him

to come to town for further advice. On applying the ear to the chest, the "bruit de frottement" was immediately discovered. On withdrawing the ear, it was found that it could be heard at a distance of four or five feet. The patient himself perceived it. It was at times accompanied by a very troublesome pain. Some general directions were given for his treatment, and he was advised to wear a tight bandage around the chest.

Dr. J. B. S. JACKSON remarked 'that there were some sonorous rales, which approached very near to the friction sound, and often gave to the hand and ear the idea of a "bruit de frottement."

Dr. BETHUNE observed that he had heard Louis remark that they could always be distinguished by requesting the patient to cough. The sonorous rale would be immediately removed, while the "bruit de frottement" would remain.

Dr. HOMANS exhibited a very large gall-stone taken from the gall-duct of a lady who died of apoplexy two days since. In December, 1840, she was first attacked with jaundice. Since that time there had never been any appearance of bile in her discharges. Her symptoms were faintness, exhaustion, diarrhœa, skin of a light yellow color at first, afterwards of a deep brown, oftentimes nausea, considerable tenderness and swelling over the liver, urine high colored, no pain, appetite exceedingly good. She was able to go out, and often appeared to be recovering, except that there was no appearance of bile in her evacuations. About eight months since, there were numerous purple spots appeared upon her legs. Within the last three months, she had discharges of blood from her mouth, nose, bladder, and bowels. On Tuesday last she complained of pain in her right thigh, which, on Wednesday, was much aggravated, extending on the outside of the leg to the ankle. On Saturday the whole right side suddenly became paralyzed, attended by some pain in the right shoulder. She soon after lost her consciousness. She had slight convulsions every 15 or 20 minutes, for six hours, when she died, on Saturday night. On examination there was found in the left ventricle of the brain a coagulum of blood, of the size of a goose-egg. The right ventricle contained blood. In the third ventricle there was about a spoonful of yellowish fluid. At the base of the brain there was a table spoonful of fluid blood. The lungs were healthy. The liver extended far over on to the left side. The color was of the greenish yellow tinge of an unripe orange. A large calculus was found in the ductus communis, and three others in the gall-bladder, which contained no bile. The cystic duct was obliterated.

Dr. J. B. S. JACKSON asked whether there was any satisfactory method of accounting for this tendency to hemorrhage in simple jaundice. He thought there might be some connection between it and the alkaline properties of the bile which was diffused over the system. He had once

known a case of extensive effusion of blood into the integuments in a person who had been for a long time using alkaline medicines for dyspepsia.

Dr. HOMANS said that the blood in the case which he had reported was exceedingly pale and watery.

Dr. HALE, Dr. JAMES JACKSON, and Dr. BOWDITCH, had seen cases where there was this tendency to hemorrhage in patients who had been using alkalies freely.

Dr. HOMANS reported the following case, of which Dr. J. B. S. Jackson reported the autopsy. An infant appeared perfectly well, except for a slight rash on the head and chest, till it was eight days old. It then gave indications of pain on any motion of the left arm. The elbow was a little discolored, purple, and considerably swollen. In the afternoon it seemed to lose the power of moving the left thigh, and to suffer if it was moved by others. In a day or two the other hip, and then both wrists, were affected in the same way. It gradually failed, and died on the 16th day.

On examination, the left elbow was found much swollen on the outside, the swelling extending above and below the joint; soft, fluctuating, and evidently containing fluid. The integuments, which were perfectly healthy, were carefully dissected. But, in cutting into the deeper parts, the cavity was pricked, and there streamed out an unhealthy, sero-purulent fluid, slightly bloody, but not offensive. It was situated in the cavity of the elbow joint, distending the synovial membrane up along the humerus, and down upon the forearm. The bones were not denuded, nor were the cartilages destroyed. There was no lymph. The right hip was examined in the same way. On puncturing the cavity of the hip joint, the fluid spurted out to the distance of a foot. It appeared here more like pus. On laying open the joint, the round ligament was found to be destroyed, as was the cartilage and the head of the bone, to a considerable extent. The head of the bone was small, and the surface red and soft. The feet were least affected. The shoulder joints were opened, but contained nothing. In the right pleura there was a large effusion of fluid, like that into the joints, but thinner and more like blood. There was a mass of lymph floating in the fluid, but none on the pleura. The lung was dark colored, compressed, and tough, containing little or no air. On the surface of the anterior inferior part, there were circumscribed, defined spots, having a gangrenous appearance. It did not, however, extend beneath the surface. The large veins were all very full of dark, thick blood. The heart was very turgid.

Dr. PALMER presented to the Society a specimen of *tænia*, which was discharged from the bowels of a child nineteen months old, without the exhibition of medicine. It measured three feet in length, and its maximum width was one line. The child was plump and healthy, and pre-

sented no symptoms of disease. It was weaned when twelve or thirteen months old, and had since been supplied with the usual diet of children of that age. Dr. Warvruck, of Vienna, has treated 206 cases of tænia in 20 years; 22 were below 15 years of age, and 1 of 3 1-2 years of age.*

APRIL 11th, 1842.—Dr. J. B. S. JACKSON exhibited a specimen of a remarkable dilatation of the biliary ducts. It was from a patient 80 years of age, who had been subject for sixteen years to attacks, the symptoms of which were referred to calculi in the gall-bladder. These attacks came on with vomiting, which was followed by pain in the right hypochondrium, extending to the back, and extreme tenderness over the region of the gall-bladder. The skin soon became very yellow, and continued so for some days. Occasionally she had large black discharges, which were at first supposed to be blood, but upon diluting them they were discovered to be bile. These discharges went on growing thinner and thinner, until they became natural and the patient got relief. In one of these attacks, a few weeks before her death, the liver was found to be enormously enlarged, which it had never been before; as the attack passed off, attended by the usual symptoms, the liver gradually returned to its natural dimensions. At the autopsy, a calculus as large as a pigeon's egg was found in the ductus communis, just above its opening into the intestine. It was exhibited, but had broken into several pieces since its removal. The gall-duct, when cut open, was 2 3-4 inches across. In the gall-duct, there was an old ulcer of a greyish color, which appeared to have been produced by the irritation of the calculus, which lay directly over it. In the gall-bladder there were numerous gall-stones, and an ulcer similar to that in the duct, which had perforated entirely through the coats of the gall-bladder, and had for its base the substance of the liver. The gall-ducts throughout the liver were very much distended. Dr. Jackson said that the common duct in this case was the largest that he had ever met with, with one exception, viz.; that of a man who died from the rupture of an aneurism of the hepatic artery into the duct. Dr. Jeffries, who attended the patient, spoke of the relief which she derived from the use of the extract of dandelion, as very remarkable.

Dr. J. B. S. JACKSON also exhibited to the Society an ovary, containing two corpora lutea, taken from a patient attended by Dr. Perry. The woman was delivered at the seventh month, of twins, one male and one fe-

* See Edinburgh Medical and Surgical Journal for January, 1842.

male. She sunk rapidly, and died three hours after delivery. The corpora lutea were remarkably distinct in all their characteristics, and controverted strongly the popular doctrine that the male belongs to the right and the female to the left ovary.

Dr. STORER reported the following case, interesting from the length of time which the mother carried the fœtus after it was probably dead. A lady, aged 46, the mother of eleven children, early in July last supposed herself pregnant; the menses, which had always appeared regular, being suppressed. During the ensuing three months, she suffered, as she ever had in her former pregnancies, from long-continued nausea and impaired appetite, and found at the expiration of that period a decided enlargement. She expected to be confined about the last of March or first of April. Feeling no fœtal motion during the month of October, she supposed that she must have been deceived, and concluded that the menses were about to cease with her. During the next two months, a distinct diminution of her size was observable. And during this period and the month of December, a slight discharge was observed each week from the vagina. On the 30th of December, she was seized as she supposed with colic, and took some cathartic medicine, which operated powerfully. The next day, while urinating, a foreign substance passed from the vagina. Dr. S. was sent for. On examining the contents of the chamber, a well-formed fœtus was found, four inches in length, in a state of partial decomposition. The skin was readily removed by friction. The abdominal parietes were tense, and it was very offensive. The after-birth, which presented the appearance of fried liver, was thrown off on the fourth day after. The discharge which previously existed, ceased. In four weeks from this time her menses returned, and she has since been regular.

Dr. GREENE remarked that he had a few meetings since reported a case of erysipelas, attacking the genital organs in an infant. He had lately had a case where it attacked the face, and terminated in gangrene of the lower jaw. He had also heard from another physician, of a case proving fatal on the eighth or ninth day, in a child five months old, who was attacked with it while recovering from vaccination. He inquired whether any other gentleman had met with much erysipelas lately.

Dr. STORER had a case in a little girl 8 months old. The erysipelas first appeared upon one of the labiæ, and rapidly extended. Lead wash, leeches, and nitrate of silver around the limits, were applied without much benefit. It extended up upon the back, and round upon the abdomen as high as the umbilicus. Blisters around it had no efficacy to check it. The child died.

Dr. PUTNAM had seen a fatal case in a gentleman. It made its first ap-

pearance upon the end of the nose. The most striking circumstance in it was the severity of the constitutional symptoms thirty-six hours previous to the appearance of the erysipelas. He died within a week.

Dr. CHARLES E. WARE had seen two cases and heard of a third within three weeks, all in adult females. In all three of them the original disease had been a very severe inflammatory affection of the throat. After it had existed for some days, and was in its severest stage, erysipelas appeared in the face, without apparently having any material influence upon or connection with the throat. Two of them proved fatal within a week. In both there were very severe cerebral symptoms; not stupor, but very talkative delirium.

Dr. GREENE observed that he had passed through two severe epidemics of this disease, while a practitioner at Saco, Maine. He had then observed, that the occurrence of severe constitutional symptoms some time previous to the appearance of the erysipelas, was apt to usher in a grave case of the disease. He had seen a man in full health die in twenty-four hours after the appearance of erysipelas. In these epidemics, severe puerperal fever followed close upon the erysipelas; and he had observed that there had been an unusual number of deaths from puerperal fever recently in the city. He had seen one case which had proved fatal on the sixth day after confinement. There was nothing peculiar in the labor, but some little difficulty in the delivery of the placenta. The woman appeared to be doing well, and the milk flowed abundantly. On the fourth day there came on pain and tenderness in the bowels, with swelling of the abdomen, a rapid pulse and prostration of strength, under which she sunk, and died on the sixth day.

Dr. BIGELOW had met with a peculiar affection of the skin lately in a girl aged 14 years. It had existed since last August. It first appeared as a small spot upon the forearm, and had gradually extended, till it reached from the shoulder to the hand, and resembled a strap of indurated skin, distinguished from the rest of the surface by its white color. To the touch it felt hard, as if infiltrated with lymph to the thickness of a piece of sole leather. Its seat appeared to be in the true skin, and perhaps in the cellular tissue. The cuticle was not altered. It is now attacking the other arm and the knees. Dr. Bigelow could find nothing exactly corresponding to it in any work upon skin diseases. It appears to be a peculiar hypertrophy of the skin. There is sometimes itching and pain, especially if the limb is in a constrained position. The treatment for the last week has been a tight bandage wet with lead water. Under this application, the thickness and rigidity have diminished about one-half.

Dr. STORER reported a case of inversion of the uterus. He was called

to a woman in labor. In ten or fifteen minutes there came two smart pains, and the child was born. In five minutes the placenta was thrown off. The cord was not touched, except to divide it and remove the child. On putting his hand under the clothes, to take away as he supposed the placenta, he found that he had hold of the uterus with the placenta attached. He removed the placenta, put his fingers to the fundus of the uterus, and passed it up without the slightest difficulty. There was some flowing from the uterus where the placenta was detached, but not great, and none after it had passed up. The woman was very much prostrated, and for an hour appeared as if she was dying. She however revived, and the next morning was comfortable. This case proves that inversion may take place, without the interference of the practitioner. For no traction whatever was made upon the cord, which was of the usual length, and not encircling the child.

Drs. Dewees, Burns, and Gouch, in cases of inversion, advise, when it can be accomplished, the return of the uterus before the removal of the placenta, on account of the dangerous hemorrhage which is otherwise liable to ensue. Dr. Bard recommends the previous removal of the placenta.

Dr. STORER followed in this case the practice of Dr. Bard, and the ease with which the uterus was returned, and the happy convalescence thus far, she being as well to-day (the sixteenth day after delivery) as she had been at the same period during any former pregnancy, proves the course to have been a judicious one. The placenta was very large, and he believed that had he made any attempt to return it, he would have met with difficulty, from its mere bulk. In a case of inverted uterus, related by Dr. Meigs, of Philadelphia, in his *Practice of Midwifery*, he was unable to return it with the placenta, and at the suggestion of Dr. James, the after-birth was removed from its attachments. Afterwards, with considerable difficulty, a reduction of the organ was effected.

The little blood which was lost after the placenta was removed, in the case reported by Dr. Storer, showed, he thought, that the great dread of uterine hemorrhage, which is felt by physicians from the removal of the placenta, even should no uterine contraction immediately occur, is not well founded. As soon as the placenta was detached, the hemorrhage ceased, and although the uterus was so completely relaxed as to allow the hand to pass with perfect freedom, without the slightest muscular contraction being perceived, there was no bleeding.

Dr. HOMANS read the following case of Diabetes Mellitus. Mrs. F., of spare habit, active and industrious, was married at the age of 23, and gave birth to six children, at intervals of about two and a half years. She was in early life subject to severe headache, and suffered much from disturbed sleep and frightful dreams. When about 16 years old, she had cough,

pain in the chest, and other indications of pulmonary disease, which continued for several months, when she completely recovered and enjoyed almost uninterrupted health until she arrived at the age of 42 or 43 years, when menstruation became irregular. For a year she suffered from derangement of the functions of the heart, lungs, and stomach; had palpitations, cough, shortness of breath, indigestion, with general debility, and febrile paroxysms, so as to induce the belief that she was sinking under consumption. From this state, by various remedies, but principally by change of air, she recovered, and regained her former health. A year after recovery from this severe illness, her husband died; in consequence, her labors and responsibility were increased, for without any other means than her own hands, she maintained her family.

In June, 1840, she experienced the first symptoms of the disease which terminated her life. While walking, she suddenly felt a universal numbness, and loss of control of her limbs. With difficulty she reached home. Her feet and hands were cold, of a purple hue, her countenance pale and anxious. To these symptoms succeeded a sensation of weariness and indisposition to exertion, dryness of the mouth and fauces, a distressing pain in the head, sudden temporary loss of sight, and dizziness. The secretion of urine was much increased, with a disposition to void it frequently. In October following, I first visited her; the pulse was then 65, full, but not hard; her tongue was preternaturally red, and her saliva white and frothy. Thirst urgent, not easily appeased, often not mitigated till she had drank a quart at once, which, she said, would pass from her almost as soon as drank. Calls to evacuate the bladder had much increased of late. Sense of weight, pain and heat in epigastric region, and distressing pain in the back and loins. For the last ten years she has been subject to wakefulness, and had occasion to void urine sometimes twice or three times in the same night. She had, for several months previous to her attack in June last, had occasionally diarrhœa, but since this period she had been costive. As the disease progressed, dryness and hardness of the skin, and constipation of the bowels, became constant, so that from my first visit, October 10th, 1840, until her death, dejections were effected by cathartic medicines entirely. Burnings of the palms of the hands and soles of the feet, with chills, anxious countenance, haggard aspect and prominence of the eyes, supervened. The appetite, which was small at the commencement of the disease, increased and became voracious, and principally for sweet things. The urine was straw-colored, or greenish; its odor somewhat sweet, very slightly urinous; its taste sweet. The quantity passed in twenty-four hours varied from 140 to 224 ounces daily; sometimes it was ropy. In March, 1841, from two wine pints and five ounces were obtained, by evaporation by heat, three ounces of solid extract. As the secretion of urine increased, the thirst and hunger increased, the mouth and fauces became

dry and parched, the heat in the epigastric region and the burning in the urinary passage became intense, and constipation more obstinate. To these succeeded universal uneasiness and restlessness, dejection of spirits, and increased burning in the hands and feet, with frequent chills over the body, irritability of temper and impaired memory. As the disease advanced, emaciation and debility increased, the skin became more hard and rough and cold, sensibility to cold air greater. The tongue became dark and the mouth and fauces tender, the saliva more tenacious, the countenance ghastly, the voice feeble and hoarse, the pulse frequent and small, a slight cough, with raising of mucus from the fauces and throat, great restlessness, unless under the influence of opium, and total prostration of muscular strength. After a confinement of six weeks to the bed, she died in February last, one year and eight months from the time at which the disease is supposed to have commenced.

In the early stage of the disease the sub-carbonate of iron was freely administered, and its good effects were obvious, for several weeks, in diminishing the secretion of urine and in invigorating the system. It should be remarked, that the disease seemed influenced by the seasons; in the summer it was mitigated, and in the winter aggravated.

Autopsy—February 8th, 1842. (From the notes of Dr. J. B. S. Jackson.) External appearance—Integuments very lax and rather dry. Not a trace of fat. Muscles rather pale, but not greatly attenuated.

The lungs were extensively tuberculous, and there were numerous very irregular cavities on both sides. On the left side there were distinct traces of recent pneumonia and pleurisy, with some effusion into the pleura, and a great deal of œdema of the lungs.

The heart was healthy, containing about the usual quantity of blood, dark, thick, and in part coagulated.

The stomach was large, and not contracted. The mucous membrane was generally pale, with very marked mamellonnement of about two-thirds of its surface. There was slight cadaveric softening at the left extremity, but elsewhere it was rather firm. The liver, sufficiently healthy.

In the right extremity of the pancreas there was found an abscess, having an opening of about one line diameter, into the duodenum, at about three or four lines from the pylorus. The course of the abscess was very circuitous, not extensive, but seemed to be confined to the limits of the organ. It was from one to two lines diameter. The parietes were whitish and dense. There was a degeneration of the proper pancreatic structure from the head to the left extremity, so far as could be ascertained by a longitudinal incision, and it looked not unlike an hypertrophied prostate gland. It was tough and dense; perfectly white and bloodless; surface rather unequal, as if lobulated, but without any trace of the glandules which make up the

healthy organ. This portion of the organ was about one half as large as usual, and surrounded with condensed cellular tissue.

The duct of the above degenerated portion of the organ was much enlarged, being five lines in circumference. It contained much viscid secretion, which did not look healthy. Two small calculi were exposed in the incision, and the organ felt as if it contained more. At about three quarters of an inch from the opening of the duct into the intestine, a calculus was discovered, white, hard, not very irregular in its surface, and measuring two lines by one.

Right kidney decidedly small, irregular, and puckered on its surface, as if from some old disease. The tubular portion of the organ was very small, compared with the cortical portion, and in one section none was to be seen. A calculus, about four lines diameter, quite uneven and irregular, of a black color, was found in what appeared to be a distended infundibulum, projecting through an opening into the pelvis of the kidney.

The left kidney was much enlarged, being five and a half inches long by two and three quarters broad. At about the centre of the posterior face there was what may be described as an abscess, although in some respects quite different from one. It was well defined, circular, about one inch diameter, and not more than three or four lines deep, becoming shallow towards the edges. It was filled with a fibrous looking substance, unorganized, whitish, moderately firm, and rather crumbling. There was no lining membrane and no pus. There was nothing peculiar in the surrounding parts.

A great number of phlebolites were taken out of the integuments of the legs, over the tibia. They differed from those commonly discovered in the pelvic veins in being oval, flattened, and yellowish.

The following is the result of an examination* of the urine passed the day before death. The specific gravity was 1037 and 3-10ths, affording about 700 grains of solid matter to the pint, according to Prout. 20 ounces evaporated gave a thick syrup evidently containing a large quantity of saccharine matter, which it was impossible to separate in its crystalline state, owing to the presence of foreign matter in the alcoholic solution. Albumen did not coagulate on the application of heat or nitric acid, but on adding a solution of nut-galls, a copious precipitate of gelatine took place. It contained about the usual proportion of urea, and a small quantity of lithic acid.

* Analyzed by Dr. J. D. Whitney.

Extracts from Foreign and American Journals.

ANATOMY AND PHYSIOLOGY.

Ranula, (a sublingual mucous bursa the cause of). By Dr. FLEISCHMAN, Demonstrator of Anatomy at Erlangen.—The discovery of Dr. Fleischman would appear to seriously question the justice of the usually received opinion, that this disease is the consequence of an obstruction of the ducts of the sublingual salivary glands. If, from either side of the frænum linguæ, the integument of the tongue be dissected, there is found close to the frænum, and lying on the genio-hyo-glossi muscles, behind the duct of Wharton and those of Rivinus, a small oval mucous bursa, traversed by cellular partitions. Dr. F. has universally found this bursa on one or the other side. He had for a long time been aware, that by the movements of the tongue the sublingual cellular tissue might become lax to a great degree, but his attention was first called to the existence of this bursa by M. Stromeyer; this latter gentleman had been led to suspect its existence by the analogy of the liquid of ranula with that of diseased mucous bursæ in other situations. This theoretic view being confirmed by anatomical examination, he considers himself authorized in regarding the ranula as due to an inflammation or some other alteration in this mucous bursa—the salivary ducts nevertheless may become secondarily affected. It does not follow, however, but that inflammation, ulceration, or salivary calculi may produce a *true* ranula; but it still remains to be proved why this disease has not been observed in the duct of Steno, where every experienced surgeon has seen salivary calculi arrested, as well as why, as Gmelin has shown, the liquid of ranula has no analogy with the saliva, being destitute of the sulpho-cyanic alkali, and very rich in albumen.—*Hæser's Repertor. Bd. 11, Heft. 6, 1841.*

Minute Anatomy of Fatty Degeneration of the Liver.—The author observes, that in order to make the subsequent description intelligible, he will premise a few words on the minute structure of the lobules of the liver.

Mr. Kiernan has well described the *vascular element* of these minute representatives of the organ. It consists of a capillary plexus intervening between the portal and hepatic veins. The diameter of the capillaries in this plexus is very large, being nearly twice that of a blood globule; while the diameter of the capillaries in most other textures is the same as that of the blood-globule, and in some (as muscle) even less, so that the blood-globules only pass along by undergoing elongation. This large size of the capillaries of the liver, probably, has reference to the deficiency of propelling power in the portal circulation. This *portal hepatic plexus* may be termed *solid*, as it is extended in all directions, and presents areolæ of nearly the same dimensions in whatever plane it is cut. These areolæ are in general not larger than the diameter of the vessels which form them, so

that a well-injected specimen might appear to be composed of little else than vessels.

In the interstices of this capillary plexus lies the *secreting portion of the bile-ducts*. If a thin section of an uninjected lobule be examined with a sufficient magnifying power, it is seen to be almost entirely made up of small, irregular, angular particles, each containing a circular or oval nucleus, within which is a minute point or two, the nucleolus. These particles have a determinate outline, are of some thickness, and possess a fine granular aspect. They also contain (which is very remarkable) one, two, or more globules of fatty matter, irregularly placed, and of somewhat variable bulk.

The microscope at once reveals the seat of the *fatty deposit in the diseased state of the organ*. Instead of containing a few minute scattered globules, *the nucleated particles are gorged with large masses of it*, which greatly augment their bulk, and more or less obscure their nuclei.

This simple description develops the whole anatomical condition of the disease, as well as explains its rougher characters, the bulk, the color, and the freedom of the circulation. The particles, lying in the interstices of the capillary plexus, enlarge slowly and equably, in such a manner as to exert no injurious pressure on the vessels, while their new contents impart that peculiar hue which characterizes the disease. It also throws no little light on the nature and source of the disease. It seems to show that the fat is an *increase of a normal constituent*, and not a formation altogether unnatural in kind; thus distinguishing it from the fatty degenerations of other tissues, where fat is deposited in situations from which it is naturally absent. It likewise indicates an increased activity in the secreting action of the liver, for a considerable period before death, though why the *accumulation* of fat should occur within the nucleated particles does not so clearly appear. To explain that fully, will require a more complete knowledge than we yet possess of the chemical affinities at play within these small laboratories of nature.—MR. BOWMAN, *Lancet*, Jan. 1842.

Account of a Phrenological Visit to the Penitentiary for young Criminals at Paris, made by M. VOISIN, in Company with a Committee of Members of the Royal Academy of Medicine, on February 17, 1839.—In addition to M. Voisin and the committee from the Academy of Medicine, there were present MM. Boullon and Pontignac de Villars, of whom the former was governor of the prison, the latter, secretary. Four hundred young criminals were examined, one by one, by M. Voisin; who, having looked at the form of each one's head, and examined it with his hand, directed him to go to the *right* or the *left*, according as his character or natural endowments appeared to be good or bad. These he subsequently divided into four classes, putting the worst in the first, the best in the fourth, and arranging in the two intermediate series those who formed a sort of *juste milieu* between the others.

Of the 400 boys originally examined, 254 were selected by M. Voisin as those whose good or evil qualities were most distinctly marked. The fourth, or best class, contained only 25, or one tenth of the whole; while 61 were arranged in the first or worst class. Of the remaining 168, 77 were placed in the third class, 91 in the second, the bad again preponderating.

M. Boullon, the governor, then gave his evidence as to the character of

the youths thus classified by M. Voisin. He stated that M. Voisin's first class included, in a very great proportion, the bad characters in the house, or those whose intellectual faculties were most limited. The second and third divisions appeared to M. Boullon not to offer any striking differences between each other; but the fourth class comprehended almost all those children who were most docile, most intelligent, and most industrious. This class included the greater number of those who were employed as monitors in the school, or as overlookers in the workshops. The testimony of M. de Villars corresponded almost completely with that of M. Boullon.

A long discussion followed the reading of the report in the Academy. The two chief objections raised by the debaters were, that the testimony of the governor and secretary of the gaol was given after M. Voisin had pronounced on the characters of the boys, instead of before he had expressed his opinion; and secondly, that M. Voisin's classification implies that the intellectual and moral faculties are intimately connected, and become developed in the same proportion, while in reality no such absolute relation between mental and moral endowments exists.—*Bulletin de l'Académie Royal, Novembre, 1841.*

PATHOLOGY, PRACTICAL MEDICINE AND THERAPEUTICS.

In connection with several valuable and interesting cases, Dr. Graves makes the following highly judicious and practical remarks:

Abscesses of the Lungs, Diagnosis, &c.—Though the introduction of the stethoscope has been of the greatest utility in the investigation of pulmonary complaints, both as regards their prognosis and their treatment, it must be confessed that, in many instances, practitioners have been induced unduly to rely upon the indications of disease which this instrument affords, and consequently have seen their prognosis fail. The following remarkable cases afford abundant proof, that patients may recover, contrary to the usual interpretation of the most significant and decisive stethoscopic symptoms, and therefore seem to merit publication, in order to warn practitioners from relying too exclusively upon physical phenomena, and too hastily concluding that pulmonary lesions, however extensive, thus indicated, must necessarily prove fatal. These cases, too, show that vast abscesses may be formed in the lungs, and yet the patient recover; and likewise, that real circumscribed abscess occurs more frequently in the pulmonary tissue than Laennec allowed, or his followers seem to believe. It is true, indeed, that where suppuration takes place in the lung, nature effects it in a manner either calculated to afford the readiest exit for the matter so formed, or best suited to promote its absorption.

This object, from the extent of the parenchymatous structure of these organs, and its relation to the air cells and minute bronchial tubes, is most easily effected, by so disposing of the purulent fluid, resulting from inflammation, that it can, on the one hand, be with facility eliminated through the bronchial tubes, or on the other absorbed in the texture of the lung itself. In other organs and other parts, a similar facility for mechanical elimination does not exist, and consequently the easiest step which nature can take is, to collect the puriform fluid, within the parietes of a circum-

scribed abscess, which may work its way outwards for the purposes of discharge. From this view it appears, that in other parts, circumscribed abscess is the ordinary means of evacuation provided by nature, and diffuse suppuration the exception; while in the lungs the reverse obtains, diffuse suppuration being the ordinary rule, and circumscribed abscess the exception. The rationale here exposed has been well explained by Dr. Stokes, in his admirable treatise on diseases of the lungs, but at the time he wrote, neither he nor I were aware that large abscesses occur so frequently in the lungs, or are so often recovered from, as subsequent observation has shown to occur.

Some may think that the duration and previous history of the disease may serve to distinguish simple from tubercular abscess of the lungs, but a more accurate examination of facts will show that no reliance is to be placed upon either as a means of diagnosis, for, on the one hand, tubercular abscess sometimes forms in the course of a few weeks from the apparent commencement of phthisis; and on the other, simple pulmonary abscess is often preceded by inflammation of many months' duration, and the origin and progress of the symptoms are quite identical with those of phthisis.

It was my intention to have added some observations upon several remarkable cases of phthisis which have occurred in my own practice, and the practice of Dr. Stokes, and in which the patients recovered either temporarily or permanently in a manner quite unforeseen and unexpected. In some, recovery took place after the occurrence of abundant tubercular depositions and crepitus; and in others, after the formation of tubercular cavities.

When the disease was produced by the operation of accidental causes in constitutions apparently sound, the recovery was not so surprising; but we have witnessed recovery in many of a phthisical constitution, and several members of whose families had previously fallen victims to consumption.

Facts such as these ought to prevent the practitioner from placing too great reliance upon stethoscopic examinations, as a positive means of prognosis; for it may be looked upon as established, that phthisis, like most other diseases, *does not always necessarily progress to a fatal termination*. With this exception, I fully concur in the opinion of the editor of the Medical Gazette, who, in the number of November 12, expresses himself in the following manner:

"It accords, we are bold to say, with the experience of every practitioner who has ever watched even a few cases of phthisis to their termination, when we remark, that the march of the disease, its disposition to assume a slow or a rapid course to its fatal issue, can never be predicted from the most precise acquaintance with the structural changes that have occurred. And what is still more important to notice, the constitutional effects do not bear any intelligible relation, in severity, to the amount of destruction of the organ in which the disease is situated. These facts show impressively, without stating any others, how much requires to be ascertained, independently of measuring out, with nice accuracy, the extent of morbid changes in the particular viscus considered as the seat of the disease, before we can have any correct notion of the nature of the agent, whose destroying, and, at present, irresistible influence, we vainly endeavor to combat in our practice."—*Dublin Medical Journal*.

Gallstones.—The following are the general conclusions to which the author's researches have led him.

1st. That females are more liable to these affections than males: the proportion as three to one, exclusive of Dr. Heyfelder's cases, 2 to 1.

2d. That the greater number are persons of melancholic and bilious temperaments, and are in the middle and upper ranks of life.

3d. That mental disquietude is a very frequent cause.

4th. That sedentary habits and good living, especially eating, also excite these maladies, and that they are most frequent between the ages of thirty and sixty.

5th. That fat people are not, as most authors assert, more subject to the disease than those of spare habit.

6th. That the use of fermented drinks operates but little in the production of the complaint. This opinion is strengthened by the circumstance of gin-drinkers being, I believe, less liable to these affections; as well as their greater prevalence amongst females. In many of the cases the habits of the patients are not mentioned; but only two are described as intemperate.

7th. That these calculi may exist without producing but little, if any, inconvenience; and in the majority of cases there is no apparent structural change in the liver or gall-bladder.

In regard to treatment, the author, after noticing several methods in use, of the efficacy of which he appears to be sceptical, seems to confide principally in the salutary effects to be derived from air, exercise and regulation of diet, mental quiet, "stomachic" and alterative medicines, cold and tepid sponging, with frictions. He refers to Durande's celebrated remedy, of which Dr. Copland speaks favorably, although the author distrusts Durande's own account of its success. The remedy consists of two parts of spirits of turpentine, and three of sulphuric ether, of which forty drops are to be taken every morning and during the passage of stones.—MR. CRISP, *Lancet*, No. ix., Dec. 11, 1841.

Researches into the Physical Causes of Metallic Tinkling, or Amphoric Ronchus. By M. de CASTELNAU, House-Surgeon (interne) of the Hospitals.—The author commences this paper by reviewing the different theories which have been suggested to explain this phenomenon, and pronounces them all more or less unsatisfactory. The hypothesis most usually adopted, and which attributes the sound to the bursting of an air-bubble on the surface of the fluid effused into the pleural cavity, is regarded by him as equally defective with the others. Experiments which he details have led him to the conclusion, that the formation of bubbles of air at the surface of an effusion is almost impossible, even in those cases where the perforation of the pleura is below the level of the fluid, while its occurrence is altogether out of the question when there exist perforations of the pleura above the level of the effusion.

The occurrence of pulmonary fistula, however, above the level of an effusion is by no means unusual; it is even stated by M. Raciborski to be the case in by far the greater number of instances. Laennec, too, had observed that, after the operation for empyema, in which the puncture is made above the level of the fluid, metallic tinkling is frequently heard; while if the wound had been made too large, the respiration acquires an amphoric sound. This phenomenon can be explained only by supposing

metallic tinkling to be a variety of the amphoric sound; and M. C.'s experiments on the dead subject have convinced him that such is really the case. He further deduces from them the following conclusions:

1. That the physical conditions essential to the production of metallic tinkling are: *a*, The existence of a tolerably large cavity, containing air, either with or without fluid; *b*, The communication of the external air with this cavity; *c*, The production of sonorous vibrations in the channels by which this communication is established.

2. The causes which give rise to these vibrations are identical with those which produce moist sounds in general.

3. Metallic tinkling may be called an amphoric ronchus, with as much propriety as the term amphoric may be applied to the respiration, voice, or cough.

4. Those cases, if indeed any such exist, in which metallic tinkling occurs independent of the above-mentioned conditions, are exceptions to the rule, as are also the theories advanced in explanation of them.

In confirmation of these views, a case is related in which metallic tinkling was heard, and the respiration, voice and cough had an amphoric sound in a phthisical patient. After death the left lung was found to be occupied by two very large cavities, which had destroyed the greater part of its substance. A septum, only three or four lines thick, separated the two cavities from each other. The superior was empty; the other contained about four ounces of broken down tuberculous matter, in a semi-fluid rather than a liquid state, and the openings of the bronchi into the cavity were all, with the exception of two, situated above the level of the softened tubercle. Similar phenomena were observed in the case of a man in whom fracture of the ribs and clavicle was followed by subcutaneous emphysema and pneumothorax. The metallic tinkling and amphoric respiration disappeared gradually as the man advanced towards convalescence; and there was no reason, at any period of his illness, to suppose the existence of fluid in the cavity of the pleura. He likewise alludes to a third case, in which a wound in the chest with a knife, though unaccompanied with subcutaneous emphysema, or even with hæmoptysis, was followed by metallic tinkling and amphoric sounds.

In a second paper on the same subject, two other cases are adduced in confirmation of the author's views.—*Archives Générales de Médecine. Oct. et Nov. 1841.*

Vaccine Virus.—The author of this paper thus explains the fact of persons who have been vaccinated being attacked by smallpox.

The deterioration of the virus, I believe, never is the cause of failure. I have found that the want of success arises most frequently from operating before the pock is perfectly matured. Out of one hundred cases, I vaccinated fifty on the eighth day, and the remainder on the ninth. Of the first half I had to repeat the operation twice in seven cases, while in those done on the ninth day I had only to repeat it in one case; than which no stronger proof can be had of the advantage of having the virus of a proper consistence (not watery) before it is used.—MR. JOHN PATERSON, *Medical Gazette*, No. xv. Dec. 31, 1841.

SURGERY.

MALGAIGNE on Pseudo-Strangulation, or Simple Inflammation of Hernia.—Strangulation is said to exist whenever a hernia cannot be reduced, and when pain, constipation, vomiting and hiccup are present. Should these symptoms progress rapidly, the strangulation is called inflammatory; if slowly, the strangulation is said to be from obstruction (*par engouement*). In either case, an operation is judged indispensable, so soon as the symptoms have acquired a certain degree of intensity. Boyer says, that we should operate if the symptoms continue to increase; and, in old or weakly subjects, he advises us to operate within the first three or four days.

Here we may ask, did Boyer reflect on the true danger of the operation, when he laid down such rules? Assuredly he did; but, with Pott, he thought "that the operation for strangulated hernia presented, of itself, no danger." In order to determine how far this opinion was founded on fact, I have noted all the operations performed during a period of five years (1836—41) in all the Parisian hospitals, and I find that in 183 cases there occurred no less than 114 deaths. Again, in old people (from 50 to 80), on whom Boyer would have us operate so promptly, I find that 70 out of 97 died. Obstruction, Boyer informs us, is produced by a collection of hardened fæces in the hernial tumor, and this frequently occurs in old hernia. But, we may ask, is this latter a fact? For my own part, I may say, that I have examined more than 3000 cases of hernia, without observing the circumstance on which Boyer insists. At Bicêtre, I have examined two of the most voluminous herniæ on record; one tumor measured $10\frac{1}{2}$ inches in height, and 22 inches in circumference; the other, 8 inches in height, by $23\frac{1}{2}$ in circumference; but in neither was there any trace of fæcal matter. Besides, we can have hard or fæcal matter in the large intestine alone, and the presence of the latter in a hernial sac is not one-twentieth as frequent as that of the small intestine. Hence, in 95 out of 100 cases, this obstruction, such as it is described in books, is materially impossible; it can only occur when the hernia is formed by the large intestine. As regards the latter case, I can affirm that I have never seen such accumulation of fæcal matter in any autopsy that I have made; and, having consulted authors, I find but a single example in which this collection had really taken place.

The cause, then, of this species of strangulation is imaginary; so, I regret to say, are the symptoms which we find detailed in surgical writings. I have myself been misled by the doctrines laid down. I once operated on a case of supposed strangulated hernia from obstruction; there was no obstruction, no strangulation, and my patient died. Similar errors of this kind have been committed by Pott, Dupuytren, and Sir A. Cooper; and were all the cases published, we should have a long list of them. But is there any way of avoiding such errors? It seems to me, that some few rules of a simple nature may be established.

1. There is simple, non-inflammatory strangulation, which produces gangrene in a few hours.

2. We have simple inflammation, which is of frequent occurrence, and generally limited to the serous lining of the hernia.

3. Finally, inflammation of the whole mass of the tumor; this latter circumstance, however, is generally a consequence of one of the former

conditions, and may be excited by the stricture, or by frequent attempts to effect reduction.

Obstruction of the intestine is a mere creation of the fancy; it is inflammation of the serous lining of the hernial tumor which has been mistaken for it. This peritonitis is one of the most frequent complications of hernia, and surgeons have probably overlooked it from not having sufficiently studied hernial tumors in their simple state. It may exist under the forms of adhesive or suppurative inflammation; the adhesive is often slight, and indicated by passing colic, or even by symptoms of indigestion, which sometimes go so far as vomiting and hiccup; the tumor is now irreducible, and the taxis will only aggravate all the symptoms; but rest in the horizontal position, and cold topical applications, will often suffice to effect reduction; in more severe cases, it may require several days or weeks before the inflammation is sufficiently reduced to allow of the return of the intestine. When hernial tumors, in this state, are reduced, nothing generally remains, except some thickening and irregularity of surface at the lower part of the sac; should the tumor not be reduced, then adhesions take place.

The suppurative inflammation is infinitely more rare, and can scarcely be discovered, except after operation or death of the patient. How are we to distinguish this inflammation of the peritoneal membrane from true strangulation, and what should our practice be? The following are the results of my experience on these points.

1. In no case of old and voluminous hernia, where bandages have not been employed, or have been left off for a considerable time, do we find real strangulation; the openings are much larger than the neck of the hernial tumor, and strangulation cannot occur. This is the result of all my observations on the living and dead body.

2. In cases of simple epiplocele, inflammation of the peritoneal membrane is what is commonly taken for strangulation; I say *commonly*, for I would not deny that strangulation may occur; I have never seen a case, nor have I found an authentic one in surgical works.

3. Hence, in the two cases just mentioned, the operation is contra-indicated; the taxis may be tried at the origin or decline of the inflammation, and the treatment should be purely antiphlogistic.—*Prov. Med. and Surg. Journ.* October 2, 1841.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

Extra-uterine Fætation.—Removal of the fætus twenty months after conception, by an incision into the superior wall of the vagina.—A healthy woman, æt. 42, the mother of one child, born several years previous, experienced a cessation of the catamenia in December, 1836. During this month, one evening, on returning from the theatre, she was attacked with a sudden and violent colic, unattended by borborygmi, and not followed by any fæcal discharge. This colic was especially characterized by violent dragging pains, proceeding from umbilicus, and spreading over the whole abdomen, but chiefly towards the hypochondriac regions. Without any treatment, relief was obtained at the expiration of two

hours, and the next day nothing remained save a feeling of weight about the loins. During the two succeeding months these colics returned twice, with increased severity, attended with great tenderness of the abdomen, vomiting, and inability to perform the slightest movement without aggravation of the symptoms. This state was relieved by leeches to the abdomen, and narcotics administered by the mouth and the rectum. After the lapse of some time the patient observed an increase in the size of the abdomen, and therefore no longer entertained any doubts of her pregnancy; and although she experienced, from time to time, returns of these colics, she obtained relief without asking for medical advice. The enlargement of the abdomen was most sensible to the right, and here she first perceived the motions of the child in March, 1837. These movements became more and more decided, and were always attended with pain to the mother. In the month of August the abdomen being very large, and some pains resembling those of labor making their appearance, a physician was called, who, after examination *per vaginam*, assured her that she would be delivered in a few days. The 28th of this month, the pains in the loins becoming more decided, and a sanguinolent discharge appearing from the vagina, the friends prepared for the coming of the child. Little by little, however, the pains died away, and it was supposed a false alarm. The patient remained one day in bed, and the next day resumed her usual labors. The breasts, which had not been tumefied, underwent no change; her accustomed colics did not reappear, and the movements of the child ceased from that moment. Her health, which had been considerably affected, was perfectly re-established. The abdomen gradually subsided, and finally, in the month of October, the catamenia reappeared, and have continued since with perfect regularity. Naturally, however, uneasy about her condition, she consulted a number of practitioners, some of whom diagnosed an ovarian, others a uterine tumor, and some an extra-uterine fœtation; but all advised that nothing should be done. After some time, the health beginning to suffer, the abdomen becoming tender upon pressure, and sufficiently painful to interfere with her occupation—that of a fruit-woman, which necessitated her to remain a large portion of the day upon her knees, with her body bent over—she decided to enter the Clinical Hospital, under the charge of M. Dubois, August 18th, 1838.

Upon examination, the abdomen appeared of the size of a woman at the seventh month of pregnancy, the integuments, however, wanting the smoothness and tension of that state. This flaccidity of the abdominal parietes, due to the absorption of the amniotic fluid, permitted the hand to distinguish all the parts of a fœtus at the full term of gestation, placed nearly in the first position, the head just above the superior strait of the pelvis. The finger in the vagina encountered a hard round body engaged in the upper brim, easily recognized as the head, covered with a soft and thin envelope, allowing the sagittal suture to be clearly made out. Examined with one hand on the abdomen and the other in the vagina, this tumor was perfectly immovable, as if locked in the brim of the pelvis. The uterus moveable, without any change either of its body or neck, was, after a little search, detected pushed to the right, behind the branch of the pubis, in a position very like that seen in the anteversion of this organ.

The diagnosis being thus clear, M. Dubois decided to make an incision into the vagina, and extract the fœtus with a forceps applied to the head; the course to be pursued with the placenta to be dictated by the different

accidents liable to occur, its degree of resistance and the amount of hemorrhage.

On the 21st of August the patient was placed in the position for lithotomy, and a short speculum being introduced, a transverse incision was made directly over the tumor, which penetrated to the bones of the head. This caused some little embarrassment, as, from the thickness of the tissue, it was impossible to distinguish with the finger between the walls of the sac and the head. This difficulty naturally rendered the operator suspicious that adhesion had taken place between the fœtus and the containing sac; and from the impossibility of perfectly comprehending the state of things, the patient was returned to her bed. That evening there was some fever, with a fetid, puriform, lightly bloody discharge from the vagina. The next day the fever was greater, pulse 104, abdomen slightly tumid, without tenderness, and the patient complaining of a sense of great weight in the whole pelvis. The puriform discharge had increased sufficient to saturate a sheet folded several times. The third day the fever still continued, with sense of tenderness, especially of the right side of the abdomen. The fetid discharge more abundant, and containing substances that might be considered as the brain and its membranes. On the fifth day the fever had entirely disappeared, and M. Dubois, on examination, found an opening of about half an inch into the sac, where he made the incision, and was enabled to extract, with a pair of strong forceps, the bones of the head by piece-meal. Proceeding in this manner, he extracted, within a month, by these means and the use of injections, all the bones of a fœtus at the full time, and the patient quitted the hospital perfectly well the 28th September.—*Abridged from the Archives Gén. de Médecine, June, 1841.*

Croup. By Dr JAMES F. DUNCAN.—In connection with some cases, the author makes the following practical remarks on prognosis and treatment :

The important practical lesson, forced upon our notice by the cases just detailed, is the necessity of paying prompt attention to every case of hoarseness that occurs at this delicate age. To the superficial observer (as in both instances, I acknowledge, happened to myself) the affection may seem too slight to be made the subject of medical treatment, as it does not appear to interfere with the health or animation of the child, which continues to look as well, and to play as merrily as ever, but not so in reality; the nature of the part attacked is such, and such is its structure, that before the disease has given sufficient warning of its approach its work is done, and medicine is unable to snatch the victim from destruction.

Nor does the second case lead us to suppose that these dangers are less before than after the period of weaning, though that opinion is generally entertained, for I consider the more frequent occurrence of croup, in the second period of infantile life, is to be attributed to the circumstance of children being then more rashly exposed to cold, probably from an idea of their being then strong enough to bear it; perhaps, also, from their being left more in the charge of ignorant or inattentive nurses. At all events, under every circumstance, the utmost vigilance is requisite on the part of the medical attendant, both to detect and to treat disease in this early period. There is this peculiarity in infantile disease, that as the little sufferers have not yet learned the use of language, they can neither express

their own sensations, nor comprehend the inquiries of the physician; and while habits of close observation are peculiarly necessary to him at all times, to enable him rightly to appreciate the severity and extent of disease even in adults, at this tender age they are the essential element of his character, the *sine qua non* of his fitness for the office he holds. The help he is accustomed to receive from others, and which is here denied to him, must be compensated for by a greater exertion of his own acuteness, and fortunately, in consequence of the greater irritability of an infant's system, disease seldom exists in it for any time, without exhibiting traces of its presence in the simple and silent but sufficient language of attitude and expression.

In speaking of the treatment adopted in the second case I shall merely remark that I did not resort to general bleeding, both from the child's tender age (eight months), and because he had previously been weakened by leeches a few days before. Nor, indeed, am I disposed to think, that in cases where the disease is so purely local as it was here proved to be by dissection, such a heroic remedy would prove generally eligible. Undoubtedly, in cases complicated with pneumonia, or even an extensive general bronchitis, it would be both desirable and necessary, but not at all so much so in a case only implicating the lining membrane of the larynx. My chief reliance, therefore, was in emetics and mercury. In the selection of an emetic, I preferred hippo wine, as being equally effectual, and more safe than tartarized antimony, which I had found last winter to depress unduly the infants I had to deal with in the workhouse. Mercury, so much lauded in the treatment of this disease, I had recourse to, both because of its generally admitted power of checking or preventing the effusion of lymph in inflammation, and because I have experienced its great value in croup in other cases in which I tried it. I gave it accordingly in large and repeated doses, and without any unpleasant effect, except that it did not accomplish the purpose for which it was exhibited. It was also employed as a dressing to the abraded surface of a blister, a method which I have found, on several occasions, highly satisfactory, in children of a very early age, threatened with hydrocephalus, and who were by this means immediately relieved from convulsions which had continued for two or three days from fever, and even from strabismus and coma. * *

Before closing these remarks, I may be permitted to draw attention to the propriety of resorting to tracheotomy, as a last resort in cases similar to those now reported. This operation, though often suggested, and even occasionally practised, seems to have now, by almost universal consent, fallen into disrepute as a remedy in cases of croup. I am not going to make light of the difficulties attending such an operation in a young infant, neither am I going to recommend its adoption in cases where no probability exists of its being performed with success, but I believe that were I to designate the cases presented to the Society, as instances of laryngitis and not of croup, the profession generally would be more disposed to sanction the employment of the remedy. I believe that the cases in which the operation has been generally attempted, were either badly selected, or it was deferred till a period at which it was impossible to be of use. Cases are on record in which the operation was successfully performed even in very young children, where a state of parts precisely similar to those just recorded was produced, where, in fact, an artificial croup was developed by accident, e. g. in consequence of swallowing boiling water,

and I can see no just ground to draw a distinction in the mode of treating them. But to justify our resorting to such a measure, two things are necessary to be borne in mind, more particularly as the disrepute into which tracheotomy has fallen is probably owing to their being neglected; the first, that an operation is absolutely necessary for the child's safety; the second, that the disease is free from any serious complication of pneumonia or bronchitis, a state of parts that ought to be considered rather the exception than the rule in this disease.—*Dublin Journal of Medical Science*, No. LX., Jan., 1842.

NOTE.

To the Editors of the N. E. Journ. of Med. and Surg. :

Since the article No. VIII. went to press, the patient first mentioned, having been exposed to the infection of smallpox, was seized with the disease, and the eruption becoming confluent, he died on the thirteenth day of the attack.

On examination of the parts concerned in the hernia, the following appearances were presented :

The cicatrix on the skin, and which had been perfectly healed, seemed to be covered with a slight semi-purulent exudation. On a careful removal of the skin, the cellular texture under it was found to be indurated and thickened, and converted into a white, elastic texture, containing granulations, and a fibrous substance, in thickness about half an inch. It covered the abdominal ring, and was perfectly interwoven with the tendon of the external oblique muscle at the ring, so as to make it impossible to separate one from the other. On viewing the internal surface of the abdominal muscles, covered by their peritoneum, the mouth of the sac was found to be open. The peritoneum seemed to have been puckered up at the point corresponding to the upper ring, which had been dragged towards the pubis, and a little loose process protruded inwards, so as to form something like a valve, and to make it appear very possible that it might, under some circumstances, have been the seat of stricture and strangulation; but, at the period of the operation, this was not the case, as the neck of the sac was perfectly intact, and without any marks of previous inflammation. The aperture was large enough to admit the little finger, which could be passed down into the scrotum for about three inches, so that the part of it corresponding to the abdominal ring had not been shut up by the inflammation connected with the incision of this part in the operation.

No other morbid appearances were presented by the intestines or other organs which were concerned in the hernia.

This man had never been vaccinated. As soon as it was ascertained that he had been exposed to the infection of smallpox, vaccination was performed, but without any effect in controlling the variolous affection. Both diseases went on vigorously, apparently uninfluenced by each other, the eruption of smallpox appearing on the day that the cow pock pustule had arrived at maturity.

J. M. W.

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Original Communications.

ART. I.—*Notes on Anhæmia,* principally in its connections with the Puerperal State, and with Functional Disease of the Uterus; with Cases.* By W. CHANNING, M.D.

Without Blood.—This name may have been given to the disease, either on account of the colorless state of the skin, of the want of blood, or of its altered condition. So it may express an external symptom, or the quantity, or the quality of the blood. A name may mislead. Thus it may express what does not exist in a disease, or exist only after such a manner as not to deserve to give a name to the malady. Probably the only reason why the present name, which expresses either a certain symptom, a certain supposed state, or quantity of the blood, remains attached to the disease, is the obscurity of the pathology of the disease itself, and so it may be at this time quite unimportant how the malady is designated. I do not like the name, but I have no better one to substitute for it.

CASES.

CASE I.—The earliest case I remember to have seen of anhmia, was in a young man. It was chronic. He continued walking abroad a long time. He was *emaciated*, and his appearance differed not from phthisis. It was before the discovery, or use here of aus-

* "The specific name for this disease is sometimes written *Anæmia*, but incorrectly."—*Study of Medicine.*

cultation, and of other means of ascertaining the physical signs of that disease, and it was very probably considered to be such. He died, and I was present at the examination after death. No other morbid organic appearance was noticed than an emphysematous state of the lungs, altogether insufficient to explain the phenomena during life, or to account for the death.

CASE II.—S. H., an unmarried female, aged about 20, presented anhæmia in a chronic and very severe form. Originally her disease was acute hysteria. Its prominent symptoms were a suffocating dyspnœa and a palpitation, which, to her, threatened life. There were severe headache, intolerance of light, acute hearing, rapid pulse, emaciation slight if any, &c. &c.—in short, the whole *mimosis* of hysteria. I have rarely if ever met with an instance more strongly characteristic of a state which brings with it intense suffering to its subject, or which may more deeply alarm the medical attendant. What is worst about it is the control it insensibly obtains over the medical attendant. After a time this may become so complete, that his whole course of medication will be resolved into the will and pleasure of the invalid. This had doubtless been the case in the present instance, as we shall by and by see.

I asked what had been the treatment. She said, mainly, bleeding, and added that she had been bled *ninety-six* times in *two years and a half*. Anhæmia here, as the word imports, was at once accounted for, and instead of admiration at the marble-like, living statue before me, the only wonder was that she lived at all. It was quite clear if any thing could be done for S. H., it must be brought about by an abandonment of a course which had been so ruinous, and which must soon end in death. I directed such means as would tend to make her present comparatively comfortable condition permanent, or at least diminish the severity of a succeeding paroxysm. It was especially ordered that blood-letting should be omitted, unless things grew so bad as absolutely to threaten life, and other things wholly fail to relieve suffering, or remove danger.

She was free from intense suffering for some days. There was at times less than the usual suffering. But it threatened to return. The troubles in the head and chest began to show themselves, and the old remedy was asked for. It was refused, and so it was when demanded with an emphasis rarely met with, and at length death seemed to be so nigh, the distress so great, and the responsibility made so heavy and painful, that bloodletting was directed. The quantity was strictly limited to *eight ounces*. This was probably too large. A

vein was opened. The blood burst from the orifice across the room, as from a punctured artery, and was of a bright arterial color. The quantity ordered to be taken was reached almost at once, and the ordinary means employed for checking the bleeding. The ligature above the elbow was loosened, and removed, without checking the rush of blood, and though great care was taken by compresses and firm pressure to stop it, more, much more blood was lost before this was done, than was taken directly by the operation. She was relieved.

Soon after this, this young woman passed out of my notice, and not long after, and in the midst of unmitigated suffering, she died. The body was carefully examined, and nothing morbid was discovered. The heart which had been for so many years the seat of so much, and so severe disturbance, was in a perfectly natural condition.

CASE III.—Mrs. Q. This case was not connected with pregnancy. It followed menorrhagia, and it presented the ordinary symptoms of anhæmia in a severe form. I have rarely known the flesh so well preserved amidst symptoms so grave, and a confinement so long. There did not seem to have been positively any emaciation whatever produced. The loss of strength was complete. She recovered.

CASE IV.—Mrs. M. This case followed confinement, but so many months after, that it may be questioned whether it grew out of the puerperal condition. Mrs. M. recovered from this state perfectly, and about three months after, had an attack of disease in the chest, which from the description was pneumonitis. Anhæmia followed. The whole symptoms in Mrs. M.'s case resembled Q.'s. There was the same appearance of health in regard to roundness or flesh—the same state of skin, the same loss of strength, and noises in the head compared to the same sounds. Mrs. M. recovered. She has been confined since without the least appearance of anhæmia.

Here are four cases of some interest, from the connection in which they stand with each other, and with those which follow. One of them occurred in a young man—was chronic, was fatal, and for a long time of it, resembled, in its extreme emaciation, phthisis. The next was an unmarried young woman. In her, anhæmia followed bloodletting very rapidly repeated, and which was done for symptoms too, viz. of hysteria, which ordinarily depend neither on a condition nor lesions, which are usually treated by, or are benefited by, bloodletting. But let that pass. Hers was a *chronic* case, and without *emaciation*, though the food eaten was, from perfect loss of ap-

petite, as small in quantity as it well could be. The hysteric complication gave new interest to this case. I remember nothing like it in any other case of pure anhæmia. On the contrary, in the latter, absolute stillness of manner, natural in its whole character, and often natural cheerfulness, accompany the disease to its very close ; the patients only expressing surprise that death was coming with approaches so gentle as hardly to warn them of its nearness. The two other cases, Mrs. M. and Mrs. Q., were perfectly well marked. They presented no better prospect of recovery than the others. They were unconnected with the puerperal state, as were the preceding, and the others had been fatal. The interest in these is found in the recovery ; and a question would naturally arise, how far this depended on the condition, the previous condition of these women, and how far on any other fact in their physical state ?

I have, at this writing, three other cases under treatment, both of them following uterine hemorrhage unconnected with labor, in which the symptoms are well marked, though not extreme. In one of these they have come on in the midst of long-continued uterine derangement. In another the time has been shorter, but the patient is greatly exhausted by constant attendance on a long sick child, and by the mental anxiety accompanying it. In a third, probably the catamenia may be about to cease, and the irregularity of the function, with its occasional excess, may explain the anhmæmic symptoms. I will briefly give these cases.

CASE V.—Mrs. W., aged 40. Severe catamenial period two months ago. Excessive flooding. Nothing like a product of conception passed, and she had been before regular. Last period, nothing unusual. In addition to exhaustion, just before present period, has come from the country over a very rough road. I was called to see her, and could not but be struck with her apparent bloodlessness. I had often seen her for a few days before, and had noticed how very pale she was. I found her suffering uterine hemorrhage at the catamenial period, and that it had been going on for several days. She was perfectly blanched ; skin, lips, tongue, every visible texture absolutely white. Mrs. W. has more flesh than most women, though less than a year ago. Is confined to bed. The least motion produces a gush of blood. The most distressing symptoms are palpitation, and a sense of beating, or rather thumping, in the head. The superficial veins, as is almost always the case, in this state of things, are most visible on inside of wrist. They present the appearance of

bright pink or rose colored lines just beneath the skin. Some of them seem flat, not the round tubes of vessels.

The treatment consisted in using the plug, and the exhibition of the different medicines which are employed in such cases. She was slowly recovering when I last saw her, and soon after returned to her residence in the country.

CASE. VI.—Mrs. L., 43, has children—has had menorrhagia for several periods. From the occasional irregularity of the function, both in time and quantity, she believes it is about permanently to cease. But in the mean time, she is feeble, exhausted, has symptoms of prolapsus uteri, is very pale, has palpitation, is easily disturbed by outward things and occurrences—bloodvessels present an appearance exactly similar to above case.

CASE VII.—Mrs. B., aged 21, has three children ; married between fifteen and sixteen. Menorrhagia excessive, skin very pale, is confined to bed, not emaciated, palpitation, carotids beat violently, blood in vessels like that above described.—I might add easily to these cases, and from very recent observation too ; but they will suffice to show how strong the anhmæmic tendency may become from excessive uterine action alone, though connected with a periodical function, and how comparatively safe it is when regarded with the true disease which attends pregnancy or follows delivery.

I pass now to a different class of cases. These have connection either with pregnancy, or the puerperal state. At least, they occurred during one of these states, or having begun in the first, the disease has continued into the second. As far as I have seen the disease in these connections, it has been always fatal. I have not seen in it, in any part of its course, any such change as would mislead any one acquainted with it, in regard to the result. I have heard of a case of recovery in a well marked example. I asked of the medical attendant what were its symptoms, and what had been its treatment. He had seen many of the cases of which I shall speak, and could make comparison of them with his. He said he could recollect nothing in the treatment of which he could speak, as having any special agency in bringing about the result. It was a well marked case—had been treated as others had been, and had recovered. He added that after a subsequent labor, anhmæmia began to show itself, but which yielded to treatment. I shall not give cases in detail. They resemble each other so closely that they would be little else than a repetition of one

another. I shall except a single case, reported by a deceased friend,* whose life and example were most dear to me, and the memory of which will never fade away.

CASES VIII. IX. X.—The first cases I met with, occurred in the practice of Dr. Spear, late of Dedham. He had seen in all, five cases up to the time at which I was called. Four of them were fatal. I saw three of them. In all these, the bloodlessness was extreme. The animal functions seemed not in the least impaired. There was no emaciation. The pulse was rapid in all. There was very little suffering; at least, there was very little complaint. I remember with great distinctness the remarkable placidness of expression of one of these women, when she and her physician felt assured that without any such obvious symptoms as ordinarily accompany the certain approach of death, she could live but a very short time longer. She soon died, and without any striking precursory change.

CASE XI.—By a somewhat curious coincidence, while I am writing I have received a letter from a physician of Dedham, Dr. Carpenter, in a postscript to which is the following. After desiring me to see this case, he says, “I have a case of anhmia in Spring Street, Mrs. W——. She was confined three weeks since—does not nurse child—had a small abscess in left breast opened to-day—no appetite.” This letter is dated June 20th. Mrs. W., I am informed, died next day. Since above, I have seen Dr. C. He stated the symptoms and treatment. The stomach soon failed, and at the close there was diarrhœa, under which Mrs. W. fast sunk. A prominent symptom was tumultuous action of the heart. The treatment consisted mainly in the employment of such nourishment as the stomach would receive, and of stimulants. The only or principal food that did not produce great distress, was liquid farinaceous. The failure of appetite was such as to make it impossible for her to take other food. Of stimulants permanent and diffusible, all such were used as promised any benefit. She retained her mind unclouded to the last.

The following case came into my possession after the death of its lamented reporter, Dr. J. G. Stevenson. It is full of interest. It presents the history of a case of anhmia, with extreme particularity, and as it was a perfectly well marked one, the reader may derive from it highly useful knowledge of the disease itself.

* J. Greely Stevenson, M.D.

CASE XII.—“Mrs. H. was confined on the 15th December, 1832. She was a woman of robust appearance, and somewhat uncommon bodily vigor. For some months before she had suffered under an inflammation of the bronchial mucous membrane, which hardly called for medical treatment, except once in July, when cough and dyspnoea were a little urgent, and were relieved by a moderate bleeding at the arm. With this exception she may be said to have passed the period of pregnancy in good health and condition.

She was confined on the 15th December at 5 o'clock in the morning, under the administration of a midwife. She flowed a good deal; though not to a very uncommon extent, nor without healthy uterine action; for all the blood lost was expelled by afterpains; and nothing occurred to excite alarm in the mind of any one of her attendants.

She passed the 16th day of the month comfortably; and the next morning took a dose of castor oil.

18th.—I was called to see her this forenoon. The oil had operated seven times. She was very pale; had a pulse of 120, with considerable action; complained of faintness, not proceeding to syncope, and of headache. Her cough was frequent, with a free mucous expectoration. The tongue was clean; the lochial discharge was natural, and milk was secreted.

19th.—In the afternoon she had alternate flushes and chills, with sweating and nausea. She is annoyed by a pulsation in the head, breast and arms. The skin is warm and very moist. The face, lips and tongue are pale. She is thirsty. Pulse continues 120, and cough is frequent; for most of the day the urine was scanty, rare, and passed with some difficulty.

20th.—She slept most of the night. The skin continues very pale, the extremities are coldish, the hands are numb. The headache and other symptoms continue; the desire to pass urine is almost constant; there is hoarseness, and in the evening there is a slight tendency to delirium. The abdominal parietes are very flaccid; the uterine tumor is hard, firm, and rather long. There is not any soreness or unnatural condition of the vagina or uterus, so far as they can be explored. The urethra is uncommonly large.

21st.—The greater part of the night was passed in sleep. During the day thirst was quite urgent; the headache continued; there was some impatience of light; the pulse was 120, in the evening rising to 124, and being large and strong. Some diarrhoea came on in the forenoon, the dejections being thin, yellow, and preceded by some

gripping pain. The surface of the body was colorless and waxen; and while the vesication produced by two blisters, which were applied yesterday and this morning, was complete, and the cuticle was raised over their whole extent, no redness was produced in the cutis.

22d.—She slept most of the night. Throughout the day the headache was less; light was painful, and the pupils were much contracted. The pulse remained steady at 120, with a quick and strong beat. The sweating ceased, and the cough was much diminished. In the forenoon there was a sensation of bearing down, as at the approach of her catamenial discharge, which did not last long. And in the afternoon, after some bodily exertion and an effort to evacuate the bowels, she coughed violently, called for fresh air, had numbness of extremities, and “felt as if her face was drawn aside.” This sensation continued for some time; and I found it difficult to convince her that her face was not awry. There were some nausea and vomiting this day. The dejections were not numerous; she felt incapable of making any expulsive effort with the abdominal muscles, though her bodily strength seemed to be great, and she moved and rose from the bed with an ease and quickness which surprised her attendants.

23d.—Most of the last night was passed in sleep. In the middle of the day, the pulse descended, for the first time, to 116. She is quite drowsy. Respiration is natural on both sides of the chest. She vomited once to-day. In the afternoon there was great flatulence; eructations of wind were almost incessant for some hours; and the abdomen was tympanitic. The countenance became very anxious and distressed; and was much changed for the worse, though a little color appeared on the lips. She complained of an overpowering sense of faintness and fatigue; this was somewhat relieved by brandy, ammonia and paregoric, which she took once or twice in the day.

24th.—Slept all night, awaking but once. The tympanitis is gone, and the flatulence. During the day the dejections were numerous, small, thin, green and yellow; she had five discharges of almost unmixed bile. The pulse varied from 120 to 112, retaining the quickness and force of its beat. At noon the pupils were somewhat dilated; and there was an excitement of the mind which increased till evening, when she talked incessantly, and was in a state of great irritation. She complained of faintness, of parched mouth, and sense of burning along the œsophagus. At 11, P. M., she became more tranquil; was groaning often; had a comfortable heat of

skin ; and a spot of red had appeared on the left cheek. The cough, which during the last three days had subsided, increased this afternoon.

25th.—A quiet night and day succeeded ; she slept all night and much of the day, without any opiate. She had some color in both cheeks, and her lips were blueish. The cough was somewhat violent two or three times. She had no dejection. Pulse was 120, except a little while at mid-day, when it was 116. In the evening the skin was warm and very white ; the blueness left the lips.

26th, 27th, 28th.—She passed these days in much the same condition. The surface was like wax. She did not complain of any pain ; was desponding and sighed frequently. She slept much. The pulse varied from 120 to 128, and gradually lost its size and strength. Her appetite was good ; she relished solid animal food ; had one dejection a day, which was copious and fæcal. The urine was passed often, about every two or three hours, a gill each time ; it was of a light color, had a very strong, offensive smell, and some mucus floated in it ; it was not coagulated by heat.

29th, 30th.—The prostration increased. She slept a great deal. The countenance expressed great anxiety. Bodily efforts produced panting and distress. The pulse was 132, small and feeble. She did not notice a change that was made in her attendants. Her appetite continued to be good. She had one dejection, which was small and fæcal. Urine was passed 8 times in 24 hours, was turbid and very offensive, and was in quantity about four pints. There is a trickling discharge of yellow and offensive urinous fluid from the vulva.

31st.—She had a restless night. Was annoyed by a cough. Had two consistent, fæcal dejections ; and discharged less urine ; this has ceased to be offensive and turbid. Her perceptions are dull, and the mind acts imperfectly. Pulse varies between 132 and 144, and is extremely feeble. Respiration is laborious.

Jan. 1, 2, 3.—She continued without any striking change, the pulse and respiration becoming more frequent until January 3d, at 9 P. M., when she died. Her intellect was undisturbed ; and three days before her death, and at several times, she made arrangements for the disposal of her family and her effects, and gave repeated orders for the examination of her corpse.

In the observation and treatment of this case, I had the aid and counsel of Dr. Channing after the second day, and of Dr. Jackson after the sixth day.

The body was examined 18 hours after death by Dr. M'Kean, in presence of Drs. Channing, Ware and Stevenson.

The adipose membrane was full of fat. Percussion returned a flat sound as high as the fourth rib; the arch of the diaphragm reached up to the fifth rib. In the left cavity of the thorax were $3\frac{1}{2}$ ʒ of serum, and on the posterior and upper part were some old adhesions between the pleuræ. The right cavity contained $2\frac{1}{2}$ ʒ of serum. The right lung had some slight, old, interlobular adhesions. It was spongy, and contained little or no red blood; none followed the cut of the knife even in the depending parts, and none followed the section of the large vessels. The bronchi were pale. The left lung was also spongy and bloodless; the bronchi were very red. In both these was a great quantity of frothy liquid, hardly stained with blood.

The pericardium contained $2\frac{1}{2}$ ʒ of serum. The heart was pale and flabby; no blood flowed on the division of its vessels.

The peritoneum was healthy. The stomach and colon were greatly distended with air. The stomach would hold a gallon, at least. The coats of this organ and of the intestines were dry, pale, very thin, almost transparent. The arch of the colon contained very dry fæces in minute scybala; there were healthy fæces in the commencement of the colon, and in the sigmoid flexure. The mucous membrane of the rectum was dry and of a very light color.

The bladder contained 2 ʒ of urine; the mucous membrane was pale.

The uterus measured 3 inches across; $4\frac{2}{3}$ from os tincæ to end of fundus. The parietes were thin. Os tincæ was of the color of India ink, or a deep slate; a shreddy, blueish mass was attached to the site of the placenta. There was a small hydatid in the left fallopian tube. The liver was healthy; of a light color. The gall-bladder contained 80 stones of a resinous consistence.

The pancreas was large.

The spleen was rather large; no blood flowed when it was cut.

The kidneys were very pale; the lining membrane of the pelvis was quite white.

On a review of this case, the most obvious cause which can be assigned to its phenomena, is great loss of blood during or after labor. A person, ordinarily in good health, having no perceptible disease except a moderate bronchitis, suddenly becomes pale, the surface of the body being waxy and bloodless; she is faint and fatigued; capable of great bodily efforts, which, however, produce palpitations and

distress ; she has pain in the head, impatience of light, throbbing at the temples, and sometimes an universal throbbing, slight confusion in the mind, and a sense of total and extreme prostration. At the same time the pulse is frequent, large, strong and hard ; at least, an observer who should not see the pallid face and miserable look of the patient, would pronounce it to be hard ; percussion and auscultation do not give signs of any disease in the organs within the thorax. With the exception of the dysuria, which will be noticed hereafter, the functions of the organs below the diaphragm are well performed ; food of various kinds, from liquid farinacea to solid meat, is taken with pleasure and digested with ease. Still, every surface, which can be examined during life, is destitute of red blood. And after death, the only remarkable appearance is the bloodlessness of the tissues ; for the inflammation of the mucous membrane of the bronchi of the left lung, which is the only morbid condition that is not produced by the course of the disease or the approach of death, is quite inadequate to the explanation of the symptoms.

These symptoms and the post-mortem appearances might easily, it would at first seem, be explained by the supposition of great loss of blood during labor. And in the first days of the disease, it was almost impossible to reject this supposition. But when the patient was seen to live for 18 days without flowing, and to be steadily declining all this time, although stimuli in large quantities were supported well, and food of the most nourishing sort was perfectly digested in the first passages, we became convinced that there was some less obvious and less appreciable cause of the phenomena. The testimony that she did not flow a very great deal, was as strong as the case could admit ; besides the midwife, who is quite capable of estimating the truth in such a case, and the worthy nurse who would be very ready to tell it, the patient herself, a trusty maid servant who removed and assisted in washing the clothes, and a judicious aunt whose situation enabled her to know the details of the labor, all agree in the statement that a very great quantity of blood was not lost, not more indeed than they had repeatedly seen, not enough to excite any alarm or remark, though, as is well known, the fears of attendants are very easily alarmed by the sight of blood.

The dysuria, which annoyed the patient in a few first days of her illness, was probably produced by the opium, which she was taking in moderate doses. This effect of opium is not extremely rare ; it is not easy to account for the fact that pain and irritation of the uri-

nary passages, with frequency and difficulty of the discharge, should be produced by this anodyne. So far as I know, it is not mentioned by any writer, though well known, perhaps, to most practitioners.

The treatment was directed to supporting the patient and supplying her vessels with red blood; she took various kinds of alcoholic and vinous stimulants; she had decoctions and juices of meat, and solid meat. All her food was well digested. The administration of iron was several times considered; but it was reasonably concluded that while the appetite was good, and the stomach and bowels disposed of the ingesta readily and healthily, the application of drugs was hardly necessary."

The above minute record makes it unnecessary to add a word more. Without knowing of its existence, I made at the time a brief note of some of the circumstances which had impressed themselves on my mind during my attendance on the case. I do not put them here to confirm what is printed above; but to give the impressions of another witness of the same facts.

Mrs. H., aged about 25, had enjoyed, apparently, extraordinary health. She was safely confined of her third child, having been attended by a midwife in the city. Not doing as well as usual, her medical attendant, the late Dr. Stevenson, was called in. The local difficulties then experienced, were distress in the head, and occasional uneasiness in the abdomen. When I first saw her, the second day from the first notice of her indisposition, I could not but be struck with the change which had taken place in her. She was bloodless—of perfect, I might add of brilliant whiteness. She was not at all emaciated. The fulness of perfect health, and the firmness too remained. The whiteness involved every tissue that could be seen. The tongue, the gums, and whole inside of her mouth were blanched. Her hair was a very light flaxen, and gave a peculiar character to the dead-white face. The manner was perfectly natural. She would scarcely confess to the least local difficulty. There was distress in the head, and pressure of the abdomen occasioned some uneasiness. Nausea was sometimes present; the milk had not disappeared; the pulse was rapid; the temperature raised, but the skin was always sufficiently warm, sometimes moist.

Nothing which I need record occurred to give a more positive character to the disease, or rather to call attention to some particular state of an organ, or of organs, which might lead to an explanation of the disease. The mind, for the most part, retained its vigor.

There was at times a remarkable naturalness in the whole manner of the patient. She called for a glass one day, and was struck with her appearance; the contrast it presented from what was ordinarily exhibited, led to a strong expression of the change. This patient felt early convinced that she should not recover; still there was so little that was positive in her condition, her mind was generally so clear, she suffered so little, and had been so entirely free from disease a few days before, that this certainty of coming death filled her with a species of astonishment. She would ask why she could not recover, and especially if there were not means of recovery which had not been tried. Dr. Jackson was called in, additional means were employed, but the disease went on. The strength was not wholly prostrated. At length the patient, in the strong feeling of approaching death, made, with a particularity very unusual, such arrangements with regard to her children as promised best for them; presents to friends were made with the utmost minuteness of detail, and at last a wish was expressed, nay, the most positive direction was given by her, that her body should be examined after death, that if possible some useful discovery might be made respecting this strange malady which pursued its progress with so little severe suffering, over which medicine had no control, and the end of which was so certain.

Mrs. H. died in the third week of her illness; a most careful examination was made. The textures were some of them dry and pale; the blood was small in quantity, pale, liquid, uncoagulated. Every organ was found in a healthy state.

The following letter is from a much respected friend, a physician in a neighboring town. It is the case of his own wife. I have made some additions, and among these the *autopsy*.

October 2d, 1838.

CASE XIII.—“*Dear Sir*,—I received yours of 27th ultimo, on Saturday evening. I am glad to find your attention has been particularly directed to the collection of cases of anhmia, and hope your efforts may lead to the establishment of such facts in relation to this disease, as may enable the profession to treat it more successfully than has hitherto been done. The information I can furnish, is indeed little, for I have met with only one case in my professional life, the melancholy event of which you well know; but I shall cheerfully submit to you all the facts that had a bearing upon that individual case, as far as I can recollect them.

Mrs. W. was from her childhood remarkable for the enjoyment of good health, and was not easily affected by the common exposures to the weather. Her age at the time of her death was 29. She was the mother of three fine boys, and their weight at birth was severally $8\frac{1}{2}$, $9\frac{3}{4}$ and $10\frac{1}{4}$ lbs. The first labor was completed in about 13 hours, the second in about 12 hours, and the third in about 16 hours, all of which were natural. Her health before confinement was generally good for the three or four first months, excepting that she was troubled, as is common, with an irritable and acid stomach. For the next two or three months, she was more comfortable, although costiveness was at times complained of, and relieved by simple enemata. The last two months were characterized more by bilious vomiting, which was, however, only occasional, say once in three or four days, and by a cumbersome state of the whole frame, owing to the size and weight of the gravid womb. This state, though sometimes very uncomfortable for a short period, did not prevent her from attending to her usual concerns.

The birth of the last child took place on the 5th of March, 1836, and nothing different occurred during this labor from what attended her previous confinements, excepting that after removal of the placenta, which was easily accomplished, she complained of a sharp but transient pain somewhere about the external passage, which was removed by an opiate, and did not return. There was not an unusual hemorrhage at this time, nor indeed at any time afterwards; and as far as this fact goes, I can say that nothing of her subsequent disease could at all be fairly ascribed to such a cause, for no more blood was lost than she had lost during her former confinement.

Everything now went on well till after the full establishment of lactation, which was soon followed by sore nipples. The lochial discharge began to diminish as lactation was established, and there was a good quantity of milk, till the end of the second week, from which time it gradually lessened in quantity, till it had nearly disappeared about the end of the third week, when the child was taken from the breast.

About the beginning of the second week, a small abscess began to make its appearance in the left breast, which seemed to have been owing to the suffering occasioned by sore nipples; and I would here remark that she had suffered much with each of her children, by sore nipples, which after three or four months got well of themselves, after many things had been tried with little or no effect.

This state of things was, I think, the immediate precursor of all that train of alarming symptoms which followed. The abscess discharged itself about the middle of the third week, but there was then no abatement of symptoms. We have now come to those symptoms which we may fairly call *anhæmic*; the first was debility, with rapid pulse of 100 to 130 in the minute, an irritable state of the whole animal system, paleness of the countenance, somewhat leucophlegmatic, clean pale tongue, thirst, occasional chilliness, want of appetite, a slow or sluggish state of the alimentary canal, constipation and at the same time inability to sustain the operation of the mildest cathartic medicine. After these symptoms had continued a few days, I felt such a degree of alarm for her safety, as induced me to request Dr. Jackson to see her, which he did on Sunday forenoon; and on the following Tuesday, I think, he again saw her, with yourself, and after a very careful examination, agreed that it was a case of *anhæmia*. At this time the symptoms were not materially different from those she had had for several days before, excepting the debility and paleness were more apparent, the pulse being, if I recollect right, 126 and feeble. A solution of the sulphate of iron was directed, with such food as she could relish. But it was soon found that she could not bear much solid food, and stimulants, such as wine of various kinds, cider, and, last of all, brandy and an infusion of capsicum, were tried in succession, but she gradually sunk from debility, and died seven weeks and three days from her confinement, having made no complaint of pain, except an occasional and very slight headache. As nearly as I can recollect, the duration of this disease was about four weeks and two days, if we date its beginning about the time the abscess was discharged, which is perhaps as near the truth as we can get, when we reflect that its proper symptoms might have been obscured by those belonging to the general irritation occasioned by the formation of the abscess.” * * * * *

In this letter, which gives in a small compass so accurate a statement of the case, and which makes a detailed account of its symptoms and progress of the disease unnecessary, one very distressing symptom is not adverted to, the state of the brain. Headache is referred to, and I know how much this was complained of. It was not so much for the pain that Mrs W. so often called attention to it, as on account of the sounds of which she was perpetually conscious. These were said exactly to resemble the noise from *sawing wood*.

At times it was described as at a distance, across the road, near a neighbor's house ; at others as if at the head-board. So distinct were these noises, so annoying, so distressing, that she would strongly express her surprise that we did not hear them. In order to ascertain if such impulse and sound of the cerebral arteries were communicated beyond themselves, the head was carefully examined by auscultation. It was of course understood that the hearing these noises was the result of morbid sensibility ; still there could be no objection to an examination which gave no trouble, especially as it has been recently alleged that auscultation does furnish an important additional means of diagnosis in at least one disease within the skull, *hydrocephalus*.

The breathing was rapid, and there was some cough. These symptoms led to an examination of the chest, but this discovered no lesion of the pulmonary tissues. So was the abdomen carefully examined, on account of occasional complaints in it. But nothing more was discovered there than that kind of uneasiness under pressure, which is not uncommon after labor.

Dissection.—This was made by Dr. J. B. S. Jackson. While I avail myself of Dr. Jackson's notes of this examination, I cannot but pay here my tribute of respect and of thanks, to this distinguished cultivator of morbid anatomy. How large is the debt which the profession here owes to Dr. Jackson, for the uniform readiness and kindness with which he has always labored for and with its members in the prosecution of this fundamental department of medicine.

“Autopsy, 24 hours after death.

Externally, pallor very remarkable. Countenance much altered, looks much older than she is.

Head.—Scalp ; some effusion of serum, probably from blister which had been applied.

Dura Mater.—Some soft, whitish coagula in longitudinal sinus, discovered where it corresponds to the convexity of the anterior lobes, although equally on the two sides ; consists of a red, soft, fleshy uniform substance growing from the exterior surface, from half to one line thick, looking more like mucous membrane than granulations, though not unlike last ; extent not fully ascertained, but probably covered one third or one half of the portion of dura mater above named. Corresponding part of inner surface of skull healthy. Interior surface of dura mater at this part had an ecchymosed appearance, as if from blood beneath the anarchnoid ; otherwise healthy. Brain quite firm. Otherwise nothing remarkable in this cavity.

Thorax.—Pleuræ. 'Three or four ounces of serum in each. Otherwise quite healthy.

Lungs.—Very œdematous in posterior half. No pneumonia, nor tubercles.

Heart.—Moderately firm; some quite soft, light-colored coagula in both sides. Blood unusually pale.

Mammary Gland.—Some pus and condensation in seat of former abscess.

Abdomen.—Nothing remarkable. Intestines moderately distended with gas. *Uterus.* By measure, a quarter larger than in the unimpregnated state."

Such are the results of a most elaborate examination of as strongly marked a case of anhæmia as has fallen under my observation.

I am indebted to my friend Dr. Hildreth, of this city, for the following notes of a case, which presents many facts illustrative of the disease.

CASE XIV.—Mrs. M. J. M., aged 42, born in England. Confined in April the last time.

Has been pregnant thirteen times, and has miscarried in four or five of them; has always been troubled during pregnancy with uterine hemorrhage, occurring generally about every second week, and lasts two or three hours; blood was generally coagulated, and sufficient to wet two or three napkins. Uterine pain has not generally accompanied the hemorrhage. Probably prevented by opiates and perfect rest. Whenever pain occurred, miscarriage followed. Within last five years has miscarried twice, and been confined at the full time three times. General health not robust; rather slender frame, with large limbs. Temper naturally irritable.

Mrs. M. was confined, just three weeks before her death, of a living child which survives. Labor natural; lost as little blood as possible. Began to fail two or three days after confinement. Grew exceedingly pale; lips particularly blanched. Skin rather warm and dry. Slight chills once or twice. Pulse ranged about 120, and was small and irritable. Some headache at first; very much annoyed by noises out of doors or in house. Dr. H. does not remember whether she complained of noises in her head. Great irritability of temper—a very prominent symptom. Often restless and wakeful at night. Previous to confinement, felt and said that she should die. A week before her death she wrote a note, which was read at church for herself as about to die, though at the time there

was nothing particularly threatening in her case. Appetite for light food continued, and occasionally she sucked a small piece of meat, and drank a teaspoonful of brandy, which she said made her feel better. No appearance of disordered stomach, except during the last week, when there was some nausea. Bowels disposed to constipation, and medicine given to remove it, generally over-operated. Milk, which was scanty in the first weeks, stopped entirely in the last. Lochia natural. Never any tenderness in the abdomen. Was thought to have lost flesh during the disease.

Autopsy, by Dr. J. B. S. Jackson, May 10th, 27 hours after death.

Externally, well formed. Rather tall, not very fleshy. Slight rigidity. Thin, bloody vaginal discharge.

Thorax.—Pleuræ. No recent disease. One or two adhesions to a very small extent. Three or four ounces of serum on each side.

Lungs.—Both lower lobes and the upper right were greatly œdematous, the serum having a yellowish tinge, not unlike the color of barley candy. A frothy serum flowed from large bronchi in great abundance, on pressure, before cutting of organs; also some mucous of same yellowish color; lower lobes friable, somewhat reddish; no pneumonia. Patch on surface of left apex, as from old disease, and such as is often seen; slightly firm, inelastic, irregular to feel. In the anterior part of base of left lung is a mass of the size of a cherry stone, partly cretaceous, but mostly a condensed curdy substance—white, rounded, imbedded in substance of organ, and near the surface, which is depressed. No other tuberculous affection.

Air Passages.—Mucous membrane healthy. One of the cartilages, just at the division of two of the large bronchi, seemed nearly ossified.

Bronchial Glands, black as ink, moist and very soft; considerable cretaceous matter.

Pericardium.—Usual quantity of serum; large, milk white patch on surface of right ventricle.

Heart.—Of usual size, flaccid, pale; more so than the voluntary muscles, which were more so, however, than usual; *foramen ovale* closed; left ventricle rather thin, exterior (pericardial) surface somewhat red; inner surface not stained with blood; structure otherwise healthy.

Blood, watery, pale red; some flocculent putriliginous looking coagula in right side; moderate quantity of fibrine in right ventricle and pulmonary artery, of dull yellowish color, and quite soft; some of the same in left auricle.

Abdomen.—Peritoneum healthy. Stomach greatly distended with gas; about three ounces of mucous and liquids. Colorless mucus adherent to pyloric portion; mucous membrane colorless; thin every where; soft in lower half.

Small Intestines, collapsed and quite small; some pasty substance in upper part, nearly colorless.

Large Intestines, much distended with gas, and for the first foot greatly so; nearly empty; some yellow fluid in first part, and some quite soft fæces towards termination. Intestines only opened in three or four places, but there they looked healthy.

Liver, of usual size, quite flaccid, and unusually friable. Gall-bladder small, filled with intensely dark and very viscid bile.

Kidneys, flaccid.

Bladder, contracted; contained a very little colorless secretion.

Veins.—Vena cava, spermatics, and the external and internal iliacs on each side were opened. The parietes and the inner surface appeared healthy. The contents appeared morbid. The blood was watery and pale, as every where else. By pressing on the inside of the pelvis, the parts being *in situ*, the blood was forced up into the iliac veins, and as it flowed over into the common iliacs, it was distinctly observed by those present, to be mixed, not merely with “putriliginous looking flocculi, such as were found in the heart, but with a thick, whitish, opaque fluid like pus.” No distinct pus was seen by itself, but the contents of the veins perfectly resembled blood with some mixture of pus. This appearance was observed on each side. There were in several veins very firm solid masses of coagula of whitish color, mixed with red; fibrine with some red globules, round like a pipe stem, filling the vein an inch or two long, tapering off to a point, not adherent; found one of them (the piped-shaped membranous masses) in the broad ligaments.

Uterus, four and a half inches long, including the os tinæ; greatest width three inches; five lines thick at fundus, and gradually increases to cervix, where it is nine lines; i. e. the parietes. Outline of neck sufficiently marked; one inch long; arbor vitæ not to be seen, but on the anterior face one or two longitudinal fissures, not very deep. Glandulæ nabothi quite large and numerous; considerable quantity of transparent, yellowish, thick, gelatiniform mucus just within os tinæ. Organ quite flaccid. Color of cut surface whitish, muscular structure not to be seen. Interior surface smeared over with a thick bloody fluid; one loose coagulum about one third inch

in diameter. Site of placenta very satisfactorily made out, on the left side of the body of the organ, just below fallopian tube, quite rough or knotted in this part, from many small, dark coagula just beneath the surface, probably the plugs of the uterine veins. Ovaries small. Corpus luteum in left, distinct, two and half to three lines in diameter, oval, brownish yellow zone around; centre colorless; could not perceive a cavity; pit over it; no cyst.

Vagina, unusually smooth on inside, dull-reddish color.

Organs generally in thorax and abdomen pale. *Spleen* large; dark-red externally; very flaccid; dark-brownish red internally and externally; soft; on pressing it, a very thick grumous fluid was forced out in great abundance, leaving the proper tissue of the organ colorless, and especially after being washed. Appearance undoubtedly owing to some peculiar condition of the blood."

CASE XV.—Mrs. W. was safely delivered of her second child. She was visited the usual time after delivery, and was left in apparently good health. In about a fortnight after I was desired to see her. I found her looking greatly changed. She had always been noticed for her perfectly healthful appearance. Her hair was very light flaxen, eyes blue, complexion fine, clear white and red; flesh abundant, though not excessive; the whole form, expression and complexion just what you often see in a woman of about 22, who has never known disease nor trouble. The change which struck me at my visit, had regard mainly to the skin and to the expression of the face. She was not at all emaciated. Her skin was entirely destitute of its natural color. The face, lips, the tongue, the edges of the eyelids, and the angles of the eyes—in short, every spot in which I remember to have seen color, was now entirely white. It was not the pearly white which I have seen in other cases. There was a slight yellow infusion with the white, which gave to it a dirty hue. This, however, much disappeared when the light fell full on the face. Then again the expression. This was anxious. The eyes, which were naturally quite open, were now almost staring. There was marked distress in the face; but not such as usually accompanies pain, or any apparent apprehended evil. She was nursing her baby, and I cannot tell you how strangely this office was contrasted with her morbid appearance, which showed as if it were impossible she could have milk. She was sitting up, and was down stairs, but on inquiry I learned she was very feeble; her voice was hollow and weak; her appetite almost nothing. Still she had milk, and her child appeared perfectly well.

I learnt that she had been failing, without any obvious cause, for some days. Suffering had been so slight, or rather so wanting, that her state had attracted but little attention. I kept notes of this case; but it would be a tedious office to read the detail. She was soon obliged to take to her bed, and never left it again. Her head was in constant distress. Each pulsation in it was accompanied with (to her) a distinct loud puff or buzz, compared to the letting off of steam from a locomotive engine. She lived near a rail road. In both Mrs. Q. and Mrs. M.'s cases, the same comparison of the noise in the head was made. This state of brain prevented sleep, and made the whole situation of the patient most uncomfortable.

One symptom was very striking in Mrs. W.'s case, and as it occurred in all I have seen, it deserves special notice. I refer to the color of the veins, or rather of the blood in them. This is a *bright pink*, totally unlike the ordinary deep blue of venous blood. Where the anhæmia is excessive, you may look in vain in the usual places for the superficial veins. They are generally so nearly empty of blood, as to show none. But in these extreme cases there are places in which vessels may be detected, and especially on the inside of the *wrists*. Here I have never failed to find these vessels. They are of a bright pink, or light rose color, the tint being very beautiful as seen in contrast with the marble whiteness and marble smoothness of the surrounding skin. The skin often becomes so nearly transparent, that these veins resemble painted flat lines on the surface, rather than a subcutaneous round vessel.

The stomach and bowels gradually became disordered in their functions, and the increasing debility and total loss of appetite for solid food, made a constant and increasing use of stimulants necessary. The effervescing, as champagne wine, and bottled cider were most craved, and were best borne. Diarrhœa was a troublesome attendant, and the means used to restrain it often disturbed other functions. This patient had extensive *purpura* over the extremities, accompanied with blood from the bowels, and from the bladder. This is the only case in which I have noticed this complication. There seemed to have been too little blood in them to give rise to it; and in Mrs. W.'s, where the extreme of bloodlessness existed almost from the first, you would have never looked for such a symptom, or rather disease.

The pulse in this case was always rapid. This was noticed in all the cases. Respiration was hurried and labored, and gave a pecu-

liar character of hurry and uncertainty to her voice. She continued to fail, though most carefully nursed, and though constant efforts were made to prevent death by all such remedial means as were thought to promise best to prevent that issue. She died about three weeks from the attack.

CASE XVI.—Anhæmia in this case begun and was fatal during pregnancy. I have seen no similar case. I was desired to see Mrs. K., and was at the time informed that she was exceedingly ill; that she had been seen by her physician only very recently, and that her recovery was very doubtful. I found her in great distress; and from the character of her complaining, there being a distinct bearing-down effort made almost without intermission, I believed she was in labor. Her distress was too great to permit her to state what the nature of her suffering was, and in a few minutes she became unconscious. The bearing effort ceased, and she rapidly sunk and died undelivered. The symptoms of anhæmia in this case were very distinct, and though she had been very ill for several days, her rapid sinking was ascribed to excessive discharges from the bowels produced by medicine given by her friends. No examination was made. Death took place in less than an hour after I first saw the case.

CASE XVII.—Mrs. B. was safely delivered of her fourth child, Oct., 1841. She had been troubled with diarrhœa during about eight months of pregnancy, and this continued from delivery to death. She was always very pale; white, light hair and eyes, sufficiently fleshy. Anhæmia was marked by its usual symptoms, with the addition of diarrhœa. The pulse was very rapid. She retained the powers of the mind after an extraordinary manner; and a serenity equal to any alluded to above, was very marked. The close of life brought no fear with it.

Examination discovered the usual facts of anhæmia, with the addition of some slight ulcerations in the bowels, which accounted for the diarrhœa.

PATHOLOGY.

This is the most important topic presented in any and every medical history. The solution of its problems would be a sure guide in the diagnosis, prognosis and treatment of disease. Said a most distinguished teacher of the theory and practice of medicine, “If I can in any useful degree teach the pupil what disease is, I have no question that he will treat it well.” What is anhæmia?

The answer must be looked for in the symptoms during life, and the appearances on dissection.

SYMPTOMS.

These have been stated in the cases. They are found in the state of the skin, the brain, the organs of the thorax and of the abdomen. There is the brilliant whiteness, smoothness, roundness, dryness and warmth of the *surface*, every where; the blanched lips, mouth, tongue; the scarcity of external or subcutaneous *veins*, and the bright pink color of their contents, with the want of the roundness in these vessels, which results from their fulness. In the *head* we have various noises which accompany the cerebral circulation. In the *mind*, various states from indifference to anxiety. For the most part great serenity, and a looking for death without fear. In the *chest*, the most constant symptom is the tumultuous action of the heart, sometimes extending to the abdominal aorta, leading, in one case of which I have a brief record, to the belief that the disease was aneurism of that artery; and in the case of S. H., above, where the action of the heart was most violent, to its being confounded with grave disease of that organ. *Respiration*, at times easy, at others labored. In the abdomen, nausea, and other disturbance of the stomach was observed in some cases; and diarrhœa more or less obstinate in others, in one accompanied with melœna.

For the appearances on dissection, the cases are referred to with the single remark, that in the majority of them, no such lesions were discovered that threw any light on the disease. Where the heart, the brain, or other organ had been most disturbed during life, there was entire want of appreciable lesion discovered after death. In all, however, very noticeable changes were discovered in the blood. And in whatever organ this fluid was examined, it betrayed the same condition.

Of the *blood*. The nature of anhmia has been looked for in the condition of the blood. This condition has been traced to chemical, physical, and vital changes in the composition, and of course appearance of this fluid. Thus the blood is pale; hence we are told the red globules, and especially what colors them is changed, or is more or less wanting. It is more liquid, coagulates but slightly, or not at all; hence the composition, its chemical elements or their relations, have undergone changes of some sort. Now as the blood is just what it is by its life, its vitality, whatever new combinations, or disturbances in the proportions of its elements, or other modifications it may manifest, must

be resolved into such conditions of its own present state as interfere with its power to sustain itself just in such a condition in regard to its whole being, as will constitute it healthy blood. In other words, I look to life, let it be what it may, as the condition of health; and in disease, I find a condition of the whole, or of parts of the system, which interferes with their manifesting the vital power in its integrity or completeness.

The condition of the blood in an hæmia is very remarkable. Thus the small vessels nearest the surface of the body, in perfect health, by their mode of action, or contents, give to that surface a tone of color which is never *white*. Said an eminent artist to me one day, "The skin in health is never white, and he who paints in imitation of it, will never succeed by using white paint alone. Only, said he, take a piece of white paper and place it on the fairest skin you ever can find, and the strongest contrast between them will be at once perceived." I speak of the surface elsewhere than of the face. There in health the small vessels circulate the blood in its *whole* color of red, elsewhere they modify it. In an hæmia the case is wholly different, and we perceive at once such a difference as satisfies us that the blood has undergone change. It is only and wholly white in the skin, even of a more intense whiteness than exists after death.

Then look at the veins where you can see them. They differ entirely in their color and size, or, as I would express it, *shape*, seeming rather *flat* than *round*. Here we have the blood itself, not as it is modified by the capillaries, if so, in health; and it is of a bright pink or rose color, instead of the healthful modena blue of its most natural state, and which in its contrast with the natural complexion is so beautiful. Then the state of the blood in the great vessels, as showed by dissection, is remarkably unlike true blood. It is thin, watery, pale, with soft, or no coagula. It resembles somewhat the blood which escapes at length from a wound which cannot be closed, as from pulling a tooth, cutting the gums, &c. in hemorrhagic persons. Yet the blood of an hæmia has its differences from this. In its cause it especially has these, *for it is not a state induced by hemorrhage*. At least, in the cases which I have seen it has not been so.

In speaking of what is an hæmia, there is one fact which I cannot pass unnoticed. It was presented in one case only, that of S. H., and impressed itself upon me deeply. I refer to the violence with which blood burst from the orifice made in bleeding her. The heart was acting with great energy. It was tumultuous in its action. Her

veins were of bright arterial color, as strikingly so, if not more so, than I have ever seen it before or since. Does not this single fact teach a doctrine of the greatest importance in this question of pathology? Does it not teach that the small vessels, which are the great artificers and agents in all organizations and all actions, that preserve the balance in health, and do most to control disease, does not this single case teach that the action of these vessels, their true functions, are subverted in anhæmia; that the arterial blood does not become venous in the capillary circulation; nay more, that this system undergoes such a change in its physical, as well as functional state, as to allow the blood to pass from one system to another with an ease, a freedom, that gives to the venous circulation the character of the arterial? This is a bold *generalization*, I well know, if such it can be called, to make a *doctrine* out of a *single fact*. But has it no support? Does it not get some in the absence of emaciation in the midst of the universal or apparent absence of all the processes which sustain the flesh? How feeble has the absorbent system become, since seemingly it remains without function, or any such function as ordinarily produces waste, and this too, when the nutritive processes are scarcely more active, than their opposite, or antagonist ones? True, appetite is not always wanting, and food is sometimes well borne, and apparently well digested. Chyle then is formed and enters the circulation, and in the current of blood with which it is mingled, finds its way to the lungs, and dissection shows how little diseased are these organs; so little, that we have no reason to suppose that the blood fails to receive all such action from these organs as may be necessary towards its perfection. But examine it in its vessels, or out of them, especially in the veins, and at once we find, as was above shown, that it has not all the properties of true blood.

Now how is blood made? A short question, but of difficult, if not impossible answer. The white chyle passes into the left subclavian vein and there mixes with the venous blood, which living fluid and living vessel act momentarily upon it, and convey the blended mass to the heart. Here it is again acted upon, and then enters the lungs. New agencies are here exerted; and still farther changed, it returns to the heart again for new action, and for a new direction. The arteries receive it, which may possess a higher life than any of the organs which have yet acted upon it, both in themselves and in the capillary system to which they give origin. In these it becomes perfect blood, and from them, composing as they do the greater if not the most im-

portant portions of all the organs, proceed directly all the various products or secretions of true blood. This is a sketch of the progress of chyle to blood. It is no answer to the question, "how is blood made?" What are the precise agencies of the several parts of this complex apparatus, and in what part of it does that disturbance begin which ends in the formation of the blood of anhmia? or that arrest of blood in its true formation? I have looked to the small vessels—to those organs in which the process would seem to find its termination, for that defect of function which results in imperfect blood; and I have arguments for this notion, in the color of the surface of the body, the color of the blood in the superficial veins, and in the phenomena which attended bloodletting in an important case. I have not alluded to the nervous function as regulating all others. That doubtless sympathizes with the whole disturbance; nay, it may give rise to it all. If I had a single fact to indicate, however remotely, what is the condition of the nerves themselves in anhmia, or how their functions are disturbed, most gladly would I have set it down. It will not do to refer me to the excited sensibility of the brain, which gives voice, so to speak, to every pulse of every cerebral artery; nor to the tumultuous action of the heart, and aorta; for what more could you expect from these organs, acting as they do under the direct influence of imperfect blood?

One appearance on dissection has not been alluded to. I refer to a remarkable dryness of the textures. This was most observed in the case of Mrs. H. Attention was led to it in the beginning of the dissection, viz. while raising the muscles from the ribs. The cellular membrane was almost dry enough to crepitate when cut, and did so when forcibly torn by the hand. The peritoneum had the same remarkable dryness, as did the muscles. This fact may find its explanation in the deficiency of blood which belongs to the disease. Not that it belongs to it in the relation of cause and effect, as will be shown in the *diagnosis*; still it does teach something of the primitive or connected disturbance of the system of vessels now under notice, and so deserves regard. What has now been referred to of a strictly pathological bearing, is rather the expression of thoughts which have occurred to me while writing of anhmia. It is not offered as new, nor as containing a theory of the disease. It may lead to other thoughts. It may give to the whole subject an importance which it may not now possess. The disease is a most fatal one. It is not so rare as may be supposed. I might easily add to the cases already given, and from the record of them, too, show how fatal anhmia is.

In this pathological inquiry I have purposely omitted, for distinct notice, a subject which gives to it its principal interest; viz. the connection of anhmia with the *puerperal state*. It will be seen that the greater number of cases occurred in this state, and that with the exception of two only, and to which reference merely is made, all of them have ended fatally. I do not recollect that any writer has treated of anhmia in this connection. I have examined the latest and fullest systematic work, and which has a chapter devoted to anhmia, but which has not an allusion to the *puerperal state* as leading to, or as having been complicated with it. The cases in this paper occurred in females, excepting a single instance. Among the women, only one was unmarried, and this was fatal. In others, where the symptoms were well marked, but which were not *puerperal*, there was recovery. This state, then, deserves especial notice in our inquiry; most particularly does it so, when the great fatality of the disease at such a period is considered. In what the predisposition of such a state to such a malady consists, I know not. I can only say I have seen it pursue its unobstructed course in women recently confined, who have seemed the least liable to any disease either before delivery, by the occurrences of labor, or afterwards. Suppose no special predisposition to exist, may not the *puerperal state* itself, if not a cause, be an unfavorable condition for sustaining the disease should it occur from common causes, and so the mortality of such cases be in part explained? Or, may not the *puerperal state* lead to graver invasions of anhmia, let its causes be what they may? It is the purpose of this paper to show that some connection subsists between the *puerperal state* and anhmia, either as to predisposition, cause, or character and tendency of the malady, in order to lead to a more faithful study of the whole subject than it has received.

DIAGNOSIS.

Anhmia after delivery may be confounded with that state which follows immediately, or soon after uterine hemorrhage. In the first or immediate state, the surface may resemble anhmia; while some of the symptoms of *reaction* are still more nearly like it. A very little observation will show that the *color* of the skin after hemorrhage, is wholly unlike the *no color* of anhmia. The skin, in the first place, may be blanched; but you see at once that something of its natural hue remains. It is not *red* in any sense of the word, but in this circumstance alone does it look like that of anhmia. There

is *complexion*. Then again the face especially, and to this are these remarks confined, after hemorrhage, is sunken, wanting its natural expression ; showing in the suddenness of the exhaustion, how sudden has been the action of the cause which has produced it.

Reaction.—After uterine hemorrhage, this sometimes is excessive, and along with the continued pallor, its symptoms nearly resemble anhæmia. The principal of these symptoms is the violent action of the heart and arteries, and the sounds which accompany this action. In the *brain* we may have sounds which may be thought to imitate those which accompany anhæmia. They differ, however, in this. They are called a *beating*, or rather thumping in the head ; and are referred to various parts of the head, the temples especially, not to the ears ; they are *felt* rather than *heard* ; and I have never known them to be compared to the distinct noises that are so painfully annoying in anhæmia. The least motion of the head increases the trouble almost to agony. The woman gets no sleep, and manifests extreme and general distress. So with the *heart*. Its action is tumultuous, audible to the patient, and is increased by the least motion.

Now how soon do all these troubles, incident to an excessive functional effort, give place to a controlled and salutary degree of *reaction* after *hemorrhage* ? Sometimes again it passes into the truly morbid, even to the production of *peritonitis puerperarum*, or puerperal fever. So often has this been noticed, that judicious observers tell us, that in an epidemic invasion of that disease, we are not to look for exemption from it, in the profuse, nay, dangerous hemorrhages which may have attended labor. We may even be called on to practise active depletion in just those cases in which we might *a priori* have supposed it least likely to have been demanded. I might here show how prompt is sometimes this *reaction*, how salutary soever it may be, to pass into threatening local inflammation. Witness a case reported some time since in the London Medical and Physical Journal, of transfusion of blood done to prevent death from uterine hemorrhage, in which in a day or two afterwards it became necessary to apply *leeches* for a threatening *phlebitis*, which had attacked the arm in which the transfusion had been done. Thus it is that simple *reaction* from *loss of blood* differs entirely from anhæmia. Every day that passes makes the safety greater in the one state, while time only developes more and more rapidly the fatal result of the other.

Diseases of the Heart and Arteries.—I have already given at some length a case, that of S. H., which was regarded as organic

disease of the heart, and in which bloodletting had been so frequently practised to save life. In that case an hæmia would seem to have been produced, or certainly not benefited, by the depletion for the supposed disease. Examination showed the error of the diagnosis. The heart was perfectly normal in its structure. I know, or rather have heard of a similar mistake, after a most careful *diagnosis*; and have before me the record of a supposed veritable aneurism of the *aorta*, which turned out to be no aneurism at all, i. e. at the *autopsy*. These were both cases of an hæmia. In these instances the disease was chronic, at least had existed much longer than is common with the disease which they seemed so exactly to imitate. The diagnosis of the more usual forms of an hæmia, which are strictly *acute*, or are speedily terminated, cannot be very difficult. The palpitation of the heart, and pulsation of the arteries, may be never so tumultuous, still there is over and above all these, so much obviously threatening disease, with occasionally, I acknowledge, most extraordinary contradictions, that a careful observer cannot but see that the apparently most pressing symptoms are in reality the least so; that death is surely coming, but to which event those symptoms in themselves would hardly be supposed to lead. And how rare is it for those symptoms to be dwelt on by the patient? Nothing has been to me more striking, I had almost said startling, than the perfect serenity, the emphatic prophecy that life will soon cease, and the composure with which that event has been looked to, as these have been manifested by women, and by young women too, who have been just placed in the most important and interesting relation of life. You feel at the moment, and the thought never leaves you, that this mysterious malady has not its place in any one organ, an organ whose obvious lesion is after death to tell you the story of its cause. The whole material organism is disturbed, diseased, while the immaterial, the spiritual, has gained new power in the very midst of all this physical confusion.

But how is an hæmia distinguished from the organic diseases just named? I have named one means of diagnosis in what I have just written. Then the symptoms given before, aid the question. You do not find in it any of the local or general symptoms which mark an organic disease soon to be fatal. The characteristic œdema of the face, of the feet, of the ancles, the ascites, the deficient urine, the thirst, the febrile commotion, the emaciation, the difficulty of any particular *decubitus*, especially the strongly expressed demand for an elevated position of the body; all these are wanting in an hæmia. In the genu-

ine disease, attacks are not paroxysmal, at least not so as in simple nervous heart, or in the graver organic lesions of that organ. There is no emaciation. At least I remember but one case in which this was very striking; viz., in the protracted one of the young man which stands first in the series. And how strong is the contrast between the marked serenity and absence of complaint, even where the disturbance of the circulation is greatest, and that deeply expressed, and visible anxiety, and even pain almost amounting to agony, which attends the severer paroxysms of heart disease. I cannot but notice this, now that I am attending a young person with such disease in its worst form, whose life for years has been an almost continuous suffering, and who, now apparently at the close of life, is conscious of nothing but physical misery, and yet is daily occupied with the delusive hope of recovery.

Chlorosis.—In its chronic state anhmæmia may imitate chlorosis, and by excessive depletion for some of the severe symptoms of the latter, the former I think may be produced. I have given a probable case of this kind. In its connection with the *puerperal* state, however, whether acute or chronic, I hardly think such an error of diagnosis can arise. I however have said quite enough of the disease itself, and of its imitations, to make it unnecessary to point out in detail, or even at all, in what it differs from chlorosis.

PROGNOSIS.

The character of this is easily to be gathered from what has been said in every page of this paper. The hourly and daily persistency of the same symptoms, with the as strongly marked failure of all the powers of life, and the unceasing progress to death which almost ever case has made, tells us what the *prognosis* should be. The unfavorable character of this gets new force from this single and simple fact, that in the two cases of anhmæmia which are reported to have recovered, there was no such change produced by any portion of the treatment, as authorized those who attended the cases to decide in any degree on what these recoveries depended.

TREATMENT.

The last question does much to settle the questions which the treatment of anhmæmia involves. The dissections which have been reported in this paper, and it would have been easy to have added to them, have thus far shed too little light on the nature of the disease to guide us in its

treatment. These teach us how fatal a disease may be, the individual instances of which may have so strong a resemblance to each other as almost to seem to depend on some specific cause, and still leave no marks behind. The most which has been done by treatment, has been to attempt to answer the most obvious indications; and in the midst of universal physical prostration, with perfect mental vigor, to assist what power remains in sustaining the functions on which living depends. The question of *transfusion* has often occurred to me. But of what possible benefit would be such a supply of blood? What might not the effect be of filling almost empty vessels with a fluid so unlike that which already circulates in them, and which *their own functions* have produced? In a disease so fatal some risk might be incurred. But is transfusion an operation which our present knowledge of it would authorize? If safe in itself, however, might not time be gained by the operation, for such functional changes to occur as would supply healthful blood?

NOTE.

I have received the following notes of the last two cases, from the physician who attended them, since the above went to press. For them, I beg him to accept my best thanks.

Mrs. B. had been affected some months before confinement with diarrhœa, accompanied by palpitation, vomiting, ringing in ears, pale lips and skin generally, by tendency to faintness, and by aphthous mouth. About a fortnight before confinement had a smart attack of vomiting and purging, keeping her confined to the bed a few days. Her labor was very favorable, Oct. 27, 1841, and for two days she was very well, and costive. She then took a half ounce of oil, which operated moderately, but afterwards the action of the bowels kept up, but not urgently, for about a week. By November 3d it became urgent, and other symptoms began to appear, but still the appetite was good and milk continued. From this time till death, which took place November 15th, she continued growing worse, with only an occasional temporary mitigation of symptoms. The diarrhœa was less urgent as to the number of discharges, but they were accompanied by great prostration. The pulse varied from 130 to 144. The mouth sore, white, red, sodden. Frequent vomiting, fainting on aris-

ing, copious collection of mucus in fauces and œsophagus, which was frequently hawked up and sometimes created gagging; countenance quite pale, &c. Pulse not only frequent, but very deficient in force. Slight exacerbations. Mind perfect to last. Exhaustion remarkable both from vomiting and dejections.

Mrs. K. has been out of health several years. Several children born dead. Not been well through this pregnancy; sore mouth, œdema of various parts, especially genitals, with great soreness. Called to her,

April 2.—Very pale lips, ears, tongue, &c.; mouth very sore; much swelling and intense soreness of genitals.

April 7.—Increase of all symptoms; roaring in ears; discharge of blood from rectum; great smarting of anus and genitals; short high breathing; diarrhœa; delirium; great distress at epigastrium and for breath; groans; death at 3 P. M., April 11th.

ART. II.—*Gun-shot Wound of the Face and Neck—Ligature of the Carotid Artery.*

To the Editors of the New England Quarterly Journal of Medicine and Surgery.

GENTLEMEN,—The following paper was put into my hands by Dr. Twitchell, of Keene, N. H., and at my request permission to publish it was granted to me. I forward it for insertion in your Journal.

G. C. S., JR.

During a mock-fight, at a regimental review in Temple, in New Hampshire, on the 8th October, 1807, John Taggart, of Sharon, a cavalry soldier, æt. 20 years, received a wound (supposed to have been caused by the wadding and burning powder from a pistol discharged near him) on the right side of the neck and face, extending from behind obliquely forward into the mouth. He was immediately conveyed to a public house, where, at the request of Dr. Crombie, then surgeon to the regiment, I assisted in the examination and dressing of the wound, and subsequently took charge of the case. We found the whole of the right side of the head, face and neck very much burned; and a large wound penetrating the pharynx and mouth, by which were destroyed, or greatly lacerated, nearly the whole of the parotid gland, the temporal, masseter and pterygoid

muscles ; and also parts of the muscles on the anterior part of the neck between the inferior maxillary bone and the os hyoides. The angle, ramus and coronoid process of the inferior maxillary bone, and the pterygoid process of the sphenoid bone, were shattered ; and that part of the superior maxillary bone which covers the antrum High-morianum was so broken that the finger could be readily introduced into the cavity ; the right side of the tongue was also somewhat lacerated. Although the external carotid artery and its branches had been divided, yet, at the time of the injury, the hemorrhage was not copious. All the fragments of bone which were so situated that they could be extracted without much difficulty were removed ; simple dressings applied to the wound ; the patient was put to bed, and an anodyne draught administered.

Oct. 9th.—The patient had rested but little ; there was a good deal of arterial excitement ; and so much inflammation and swelling of the throat and fauces, that he was unable to swallow or to articulate intelligibly. His respiration was somewhat impeded ; his face very much swollen ; and he had great pain in the head. I directed V. S. to $\frac{3}{4}$ xx. ; an evaporating lotion to be applied to the head and face ; and a cathartic enema to be administered, which procured two or three dejections. These remedies appeared to give some relief for a few hours ; but in the evening the excitement and pain increased. Ten or twelve ounces more of blood were taken ; the lotion to the head and face was directed to be continued ; and an emollient poultice to be applied to the wound.

Oct. 10th.—The patient had slept some during the night ; the pain and swelling were diminished ; and, with much difficulty, he swallowed a little cold water—though a part of it escaped from the wound in the attempt. The local applications were directed to be continued ; a tea-spoonful of a solution of borate of soda to be put into the mouth every half hour ; and a little gruel to be given if he could swallow it. In the afternoon he was removed to his father's house in Sharon, a distance of eight or nine miles, without any unfavorable symptom being developed. A cathartic of magnes. sulph. was ordered to be taken as soon as practicable.

Oct. 12th.—The inflammation, pain and swelling were much diminished. Pulse 70—80, soft. He could articulate more distinctly ; and the deglutition was improved ; though in the attempt to swallow liquids, a part still escaped through the wound. Suppuration had commenced ; and the dead parts were beginning to separate. The

posterior upper tooth of the side affected appeared in the wound and was removed. The magn. sulph. had procured three or four dejections. The emollient poultices were continued; and he got a little broth.

Oct. 14th.—Suppuration copious; some portions of the dead parts had become detached, and were removed; and some fragments of bone came away.

Oct. 16th.—Since the last visit, the disorganized parts had very much separated; and the coronoid process, angle and ramus of the inferior maxillary bone as far as the posterior molar tooth had now been removed. The patient could sleep quietly; and could take as much food as was necessary. I discontinued the poultice, and directed simple cerate spread on pledgets of lint to be applied.

Oct. 18th—(Ten days after injury). The wound had now become cleared of all dead portions of muscle and cellular membrane; and presented a large circular aperture from two to three inches in diameter; at the bottom of which might be distinctly seen the internal carotid artery denuded from near the bifurcation of the common trunk, to where it forms a curve to enter the canal in the petrous portion of the temporal bone. Directly upon this curve of the artery might be seen a dark speck, of a line or two in diameter, which seemed to be a dead portion of cellular membrane adhering to the coats of the vessel. I carefully touched it with a probe; but finding that it adhered, I desisted from the attempt to remove it; and expressed to the patient and his friends my fears of a dangerous if not fatal hemorrhage when that should separate. I applied the usual dressings, left the room, and was about leaving the house, when some one of the family cried out that he was bleeding. I hastened back to his room, and found him deluged with blood. The dressings were immediately removed and the blood jetted forcibly, in a large stream, to the distance of three or four feet. With the thumb of my left hand, I instantly compressed the artery against the base of the skull; and thus effectually controlled the hemorrhage. The patient had fainted; and fifteen or twenty minutes had elapsed before he was so much revived that I dared to make any attempt to secure the artery. Then, still keeping the thumb firmly pressed on the orifice, I proceeded to clear the wound from blood; and having done this, I made an incision, with a scalpel, downward, along the course of the artery, to more than an inch below the point where the external branch was given off; which, as stated above, had been destroyed at

the time of the injury. Having but one hand at liberty, I depended upon the mother of the patient to separate the sides of the wound; which she did, partly with a hook and occasionally with her fingers. At length, partly by careful dissection and partly by using my fingers and the handle of the scalpel, I succeeded in separating the artery from its attachments; and passing my finger under it, I raised it up sufficiently for my assistant to pass a ligature round it. She tied it with a surgeon's knot, as I directed, at about half an inch below the bifurcation.

I removed my thumb and sponged away the blood, not doubting that the hemorrhage was effectually controlled. But to my surprise and disappointment, the blood immediately began to ooze from the rupture in the artery; and in less than ten minutes it flowed with a pulsating jet. I compressed it again with my thumb; and began to despair of saving my patient. What further could I do? It was impossible to apply a ligature above the orifice; compression, then, was the only alternative. How was that to be effected? Should some one sit by the patient and compress the artery constantly with the fingers till adhesion should take place? Possibly that might have been done; but I resolved to make another attempt first. Raising my thumb, I placed a small piece of dry sponge directly over the orifice in the artery; and renewing the compression till a little larger piece of sponge could be prepared, I placed that upon the first; and so went on, pressing the gradually enlarged pieces obliquely upwards and backwards against the base of the skull, till I had filled the wound with a firm cone of sponge, the base of which projected two or three inches externally. Then I applied a linen roller in such a manner as to press firmly upon the sponge; passing it, in repeated turns, over the head, face and neck. I directed that the patient should be placed in bed, with his head moderately raised; and that he should be kept as quiet as possible; and as his pulse was very feeble, he having lost, at that time, between three and four pounds of blood by estimation, he was allowed a little wine and water, and occasionally some broth. We carefully watched him through the night; but no bleeding occurred; and he complained of but little pain.

Oct. 20th—(Forty-eight hours after the operation). There had been no hemorrhage; and there was but little excitement. Pulse 95—regular. I directed the patient to take gruel and broth; and a little wine and water if faint. This course was pursued till

Oct. 24th,—when the bandage was removed and a fresh one applied, without disturbing the sponge.

Oct. 26th.—The fetor arising from the accumulation of matter in the sponge had become so offensive as to nauseate the patient. I carefully removed several of the external pieces of sponge, washed the wound with a weak solution of potass. carb. ; substituted lint in the place of the sponge which had been removed, and applied the bandage as before.

Oct. 28th.—All the sponge was removed except a small piece directly on the artery ; the wound was washed with a weak alkaline lotion ; and pledgets of lint, spread with simple cerate, were applied.

Oct. 30th.—The ligature on the carotid came away ; and the wound was rapidly filling up with granulations.

Nov. 1st.—The remaining piece of sponge was removed. The patient attempted, for the first time since the injury, to masticate his food ; but the under jaw was drawn so much to the left that the teeth would not meet. To remedy this inconvenience, I caused an ingenious blacksmith in the neighborhood to make an instrument something like Hull's truss ; one end of this being fitted to the top of the head, it was brought down, on the right side, under the chin ; and the pad on the other end was made to press on the left side of the inferior maxillary bone. He wore this instrument most of the time during the remainder of the treatment ; and it effectually answered the purpose.

Nov. 11th.—The patient had very much improved. Several pieces of bone and a tooth had passed out from the wound, which was rapidly cicatrizing. There was but little discharge of matter ; he was able to move his lower jaw, and to masticate solid food with ease.

Dec. 30th.—Some small fragments of bone and a tooth from the upper jaw had been cast off. The wound was completely cicatrized and the parts consolidated. There was, however, some little deformity in consequence of the depression on the right side of the face.

This case seemed to me at the time highly important and valuable ; since it established surgical facts, which, as far as my knowledge extended, had not till then been known. 'The question of the practicability of the safe application of the ligature to the common carotid artery, was, in my opinion, now solved. I had entertained that opinion for some time before ; having repeatedly tied the vessels in dogs, and in one instance in a horse, without causing them much inconvenience ; but, at that time, I had seen no account of its having been attempted on the human subject.

Sir Astley Cooper's claim of priority in the successful application

of the ligature to the common carotid artery has been generally acknowledged. He performed the operation in June, 1808; eight months after the above operation. Sir Astley's case was undoubtedly the first published; but it appears from some recent publications, that Mr. Fleming, of the British navy, tied the vessel on the 17th October, 1803, for a servant on board ship who had attempted to commit suicide. The patient recovered. Mr. Fleming died abroad; and the case was first published by his assistant surgeon, Dr. Coley, in January, 1817.

Of late, this operation has become very frequent, not to say fashionable, in this country at least; and in some cases, accounts of which have been published, I should think it had been performed unnecessarily. The case related above, in my opinion, clearly demonstrates the inutility and consequent impropriety of tying the carotid artery for the purpose of preventing the growth of tumors about the head and neck, or as a step preparatory to the removal of such tumors by the knife. Although the common carotid had been tied, but a few moments only elapsed before the hemorrhage from above was so profuse as to require immediate and continued compression. If the circulation is so soon restored by anastomosing branches, of what use can the ligature be under such circumstances—or what prospect can it offer of preventing the growth of such tumors? Reason and the experience of all practical surgeons concur to show that whenever an arterial trunk is tied, or in any way obstructed, the circulation is promptly restored by anastomosis—else mortification would be the consequence.

ART. III.—*Contributions to the History and Diagnosis of Croup.*

By JOHN WARE, M.D.

EVERY practitioner who has had much practical acquaintance with disease, will have observed that there are great differences of character among the cases to which he finds it convenient, in accordance with the custom of medical men, to give the general name of *Croup*. He finds that a certain portion of these cases—and by far the larger portion—yield readily to the means which he employs, and very often to the ordinary domestic remedies of mothers and nurses. He has

indeed reason to believe that a considerable number of them would spontaneously subside if left to themselves. On the other hand, he finds that there are some cases, fortunately but few in proportion to the whole, which exhibit throughout their course a character of obstinacy that bids defiance to treatment; and which, with few exceptions, pass on to a fatal termination uninfluenced by any remedies he can employ.

Different views may be taken of the nature of these cases. It is believed by some that the former are not, for the most part, essentially different from the latter; that the difference is more in degree than in kind, or that the difference in the severity and result depends on difference of management; that the favorable character and course of the former are mainly owing to early and judicious treatment, and the fatal event of the latter to the inefficient or too tardy application of remedies. A long, and I trust a faithful examination of this disease has, however, satisfied me that this opinion is not correct. I have been led to believe that there is an original and essential difference in these cases; that those of the first kind are pathologically different from those of the second; that the former, even if they terminate fatally, which happens in some rare instances, do not terminate in the same way, or at least do not exhibit the same morbid conditions; and that no variety or deficiency of treatment will cause a case of the one kind to assume the character of the other.

I do not, however, mean to imply that all the cases to which I refer, are capable of being classed under two varieties. Among those which I have characterized as of the more mild and tractable sort, we still find great differences in the mode of attack, course, and mode of termination, and also in the degree in which they appear to be influenced by remedies. The object of this paper is to endeavor to contribute something towards determining the nature and extent of the distinctions referred to. With this view I have made an examination of all the cases of croup of every kind which have occurred, during the last twelve and a half years, in my own practice, and of this examination I now submit the results. Upon certain points relating to the severer form of the disease, I have included the examination of a number of other cases, extending over a period of twenty-five years, witnessed partly in my own practice, partly at dissections, and partly in consultations.

It should be first observed, that I have been accustomed, in noting cases in order to an inquiry of this kind, to set down as

croup, all those which in the common language of the profession are called so—viz. all those which at any stage of their progress present a fair question of diagnosis ; all those in which we hear the shrill, sharp, ringing cough, which is regarded as the cough of croup, accompanied by a distinct embarrassment of respiration, however slight, and some affection of the voice. It follows, of course, that many very slight cases must have been included among those on which these remarks are founded—cases which yielded or subsided almost at once. Yet it is right that these should form part of the materials of our examination. When we are in search of means of diagnosis, our attention should be directed to all those cases which have, at any period of their progress, exhibited symptoms that give rise to a well-grounded suspicion of their character. Although many cases which excited the apprehension of severe croup on their first attack, pass away very readily, and by their result show themselves to have been of very moderate severity ; yet, on the other hand, it is to be recollected that many cases which at last terminate fatally, did not at their beginning exhibit symptoms at all more severe, or excite apprehensions at all more serious, than those which have so readily subsided.

Of the cases to which this inquiry relates, occurring during the period extending from January, 1830, to July, 1842, the number is 131. For the convenience of examination, these may be divided into four classes. I do not intend by this arrangement to express the opinion that they constitute four distinct diseases. I would not be understood even to assert positively, with our present amount of knowledge, that they are not different manifestations of the same disease. The purpose at present is to speak of them as groups of cases distinguished by certain differences in their symptoms and course, which may or may not be connected with an essential difference in their nature. These classes may be designated, with a view to their probable character and for the purpose of referring to them more intelligibly, by the terms membranous, inflammatory, spasmodic and catarrhal. Of the whole number there were,

	Cases.	Deaths.
Of membranous croup,	22	19
Inflammatory “	18	0
Spasmodic “	35	0
Catarrhal “	56	0
	<hr/> 131	<hr/> 19

In the first class are included those cases in which there is reason to believe that a false membrane has been actually formed lining the larynx and trachea.

In the second class, those cases in which the symptoms are for the most part of the same character as in the first, but in which there is reason to believe that no membrane has been formed. The grounds for the opinion formed of the nature of these two classes will appear subsequently.

The terms applied to the third and fourth classes, require no particular explanation.

The symptoms on which we depend for the diagnosis of croup, relate to the cough, the voice and the respiration.

In the early stage of the first form of croup, the cough is by no means peculiar. In the advanced, it assumes a somewhat different character. In the early period it is sharp, shrill, ringing; it does not vary from that which we hear in the other forms, except perhaps that in some of the less formidable cases it is much louder and more violent at their beginning, than it is in those which prove ultimately more alarming. In the latter period it becomes less loud and ringing, but is equally sharp—it often becomes almost inaudible, bearing the same relation to a common cough, that a whisper does to the common voice. The cough then affords no certain means of distinguishing this form of croup at that period of it in which the diagnosis would be most valuable.

Of the state of the voice, nearly the same remark may be made. In the advanced stage of a case it is sufficiently characteristic. It becomes a hoarse, sharp, and almost inaudible whisper. But early in the disease it is not always affected at all, and if it be, cannot with certainty be distinguished from the hoarse voice of common catarrh.

The condition of the respiration affords us far more important information. In the early period of the disease, however, when we most need means of diagnosis, it is not a symptom which always attracts attention, even from the physician; much less from others who are around the patient. The common description of the breathing in croup, does not apply well to the beginning of the membranous variety. It seems rather taken from cases of a less dangerous kind, in which the breathing is from the first, loud, harsh, suffocative; attended with great efforts, and much loud coughing, creating great alarm, and calling at once for efficient means of relief. But the breathing in membranous croup does not excite attention in the very

commencement of the disease. It is comparatively quiet and unobtrusive. Its true character is not at once to be detected, but only by a careful and accurate observation. The patient has not the ordinary aspect of difficult breathing; in fact, the breathing is not difficult at the very first. He probably experiences no distress. There is no real deficiency in the performance of the function, and no obvious embarrassment. There is only a little more effort in drawing in the air, and a little more force exercised in its expulsion, whilst the amount of air admitted and expelled is fully equal to the necessities of life. This perhaps would not be noticed on a casual glance at the patient, but will be at once perceived on attending to the muscular movements subservient to the function, which are—to use an expressive French term—somewhat exalted. It is indicated very soon, also, by a slight dilatation of the nostrils, and a little whiz or buzz accompanying the passage of air through the rima glottidis. This sound is distinguished either by placing the ear near the mouth of the patient, or by applying the stethoscope on the back of the neck, or directly upon the upper part of the larynx.

This at its very beginning is the essential respiration of membranous croup, and it affords far more aid in diagnosis than either the cough or the voice. It is not, however, always found as pure as has been described. It is often mingled with, and obscured by, other sounds. Thus the disease is often attended by paroxysms of irregular and spasmodic breathing, accompanied by violent muscular efforts and great distress, and of course producing other and more obvious sounds than those described. There is often also present in the air passages, either above or below the glottis, a quantity of mucus, giving rise to a constant or occasional rattling, which seems to mask the proper sound of croup. These adventitious sounds being also as frequently heard in the other forms of croup, are therefore of no service in diagnosis. Generally there are intervals of relief from these superadded symptoms, especially immediately after vomiting or bleeding, but the essential breathing of the disease will be found to be unchanged and unmitigated in these intervals of ease; although the apparent relief may be so considerable as to give rise to strong, but fallacious hopes of recovery.

We occasionally hear, in cases of considerable enlargement of the tonsils, a kind of breathing which closely resembles the early breathing of croup. Usually in such patients the respiration is loud, sonorous, unequal and irregular, but in a few it is quiet, steady, with a

muscular effort occasioned by a mechanical obstruction like that in croup. The distinction between them can, however, be readily made, by attending carefully to the seat of the obstruction, which is above the rima glottidis in the one case, and at it in the other ; by the sound of the cough and voice, which are not croupy, and by the fact that the obstruction varies in degree and sometimes vanishes, with change of position.

I have endeavored to describe this respiration as it exists in its slightest appreciable degree, at the earliest period of its manifestation. As the disease advances, it becomes very strongly marked, whilst the condition on which its peculiar character depends, viz. a mechanical narrowing of the orifice through which the air passes, becomes much more obvious.

The muscular effort, in the latter stage, becomes very strong, both in inspiration and expiration. During inspiration, whilst all the muscles concerned in it are in the highest state of activity, the mechanical impediment against which they act, is often strikingly displayed by the falling in of the soft parts about the neck and clavicles, at the epigastrium, and between and along the lower edge of the ribs—the air not passing in through the narrowed opening of the glottis so rapidly as the dilatation of the chest by the increased muscular effort would render necessary. The expiration is chiefly characterized by the amount of force employed to expel the air. In health the expiration is usually easy, and accompanied by little effort. Where there is no unusual obstruction, the mere tendency to collapse of the lungs, would be sufficient for the expulsion of the air, as we see in the dead body ; so that the walls of the chest have merely to follow up this contraction, without adding to its force by any muscular effort. But in croup, this is not enough ; and we generally find that the air is blown out forcibly against the mechanical resistance occasioned by the disease. We find the same strong contraction of the muscles concerned, especially of the abdominal muscles, which is observed when air is blown out forcibly through a narrow passage.

This is the proper breathing of croup ; becoming more and more intense as the disease approaches its termination, till the whole life of the individual seems, as it were, to concentrate itself in this one effort. The patient in this extreme condition seeks, by a multitude of changes of place and position, to find some alleviation of his agony ; the cough, and with it the voice, have become nearly extinct ; and his inarticulate appeals and beseeching looks for relief to those from

whom he is accustomed to look for it, constitute one of the most touching scenes which we are called upon to witness in the practice of medicine. Happily the extreme suffering usually, though not always, subsides towards the close of life, and death takes place at last with comparative ease.

In the advanced stage of croup, the breathing is often modified by circumstances other than the mere mechanical obstruction at the upper part of the larynx. After a certain period the false membrane is in some places separated from its adhesion to the mucous surface, by the secretion of pus. The passage of air to and fro, and the efforts of coughing, detach it partially from its adhesion, and break it up more or less into shreds, which however still adhere at one of their ends. These ragged portions of membrane, mingled with the pus, move up and down the air passages, causing some variety in the sounds and also in the actual difficulty of breathing. Death is sometimes very suddenly produced by a collection of this material into a mass which becomes impacted in, and thus plugs up, either the upper or lower part of the larynx. This at least, from the state in which the parts are found on dissection, would appear to be the mode in which death takes place.

The respiration may also be modified in croup from a congestion or inflammation of the lungs, which occasionally supervenes. The embarrassment of respiration has also sometimes appeared to be increased by an accumulation of air in the lungs, which arises from a deficient balance between inspiration and expiration. Owing to the greater ease with which we can make extraordinary and continued efforts of inspiration than we can of expiration, a greater quantity is admitted than can be readily expelled, before the suffocative feeling of the patient impels him to a new effort for relief.

But although there may be a combination of the respiration of this disease with that produced by other affections of the throat or lungs, yet the respiration of croup is in its nature and character essentially distinct from them. In them the difficulty of breathing and the unusual muscular effort may arise from a variety of causes, producing great varieties in the modes of dyspnœa; in croup the one essential condition is the mechanically contracted state of the passage through which the air passes, and all the peculiarities of the dyspnœa proceed from this condition. In one particular the breathing of asthma resembles that of croup, viz. in the intensity of the effort by which the current of air is made to move in both directions against a

mechanical resistance ; but the point of the resistance and consequently the other circumstances of the function prevent the resemblance from extending to other points.

The *first* form of croup, then, is distinguished by the cough, the voice, and by a peculiarity of the respiration, which I have attempted to describe, and which, for the sake of distinguishing it in this essay, may be called *intense*.

In the cases of the inflammatory croup, which constitute the *second* form of the disease, the condition of the voice, cough and breathing are precisely the same as in the cases of the first class. There is no certain way by which, so far as these symptoms are concerned, cases of the one kind are to be distinguished from those of the other. The cases enumerated among the second class were of all degrees of severity, but none of them were fatal. Cases, however, of croup which terminated fatally, and in which no membrane was found on dissection, are recorded upon very high authority. To these we shall have occasion to advert hereafter. In addition to the symptoms proceeding from the condition of the cough, voice and respiration, I have noted, in a few examples of this form of the disease, a tenderness of the larynx on pressure.

As cases of this class are then usually favorable in their termination, whilst those of the first are usually fatal, the diagnosis between them, in the early stages especially, becomes of very great importance, both as regards prognosis and treatment. Of the means by which this distinction may probably be made, and of the grounds for believing these two to be essentially distinct diseases, and not different states or conditions of the same disease, I shall take opportunity to speak, after considering the other two classes which have been enumerated.

The *third* includes certain cases which are generally designated as *spasmodic croup*, and sometimes as *spasmodic asthma*. The attack is always sudden, and usually occurs after the subject has been, for some time, asleep. Very often it occurs in the evening, during the first sleep of the child, before its parents have retired to bed ; but perhaps as frequently at a later hour of the night, or very early in the morning. The patient wakes in great distress for breath. His inspiration is attended with great effort ; it is loud, ringing, shrill, somewhat resembling the hooping inspiration of hooping cough, but louder and more sonorous. The expiration is comparatively quiet and easy. The voice, at the same time, is hoarse and broken, and

there is a loud, hoarse, barking cough, which closely resembles that of the preceding kinds, and indeed alone, would not serve as a mark of distinction from them. These cases seem occasionally to arise from indigestion ; but more frequently we can trace their occurrence to cold, especially as they have been often preceded for a few days by symptoms of catarrh. When left to themselves, they will usually subside spontaneously, but from their suddenness and violence, they cause great alarm, and call for immediate assistance. They rarely fail to yield to an emetic or venesection, leaving behind them for a longer or shorter period, rarely for more than twenty-four hours, some hoarseness and some degree of the croupy sound of the cough, with a little huskiness or stuffiness of breathing. At no period is there any proper *intensity* of respiration.

These cases, from their suddenness, the time of the attack, the great violence of the first symptoms, and the consequent alarm which they create, produce a stronger impression on the minds of common observers and even of many practitioners, than those of the other kinds. This mode of attack is most closely associated in their minds with the term croup ; and it is regarded as tending, if not checked, to terminate in the same state of things with cases of the first class. So far as the cases before us are concerned, however, this never happens, and of the whole number included under this examination, no one proved fatal.

The fourth class includes cases not falling under either of the above, and yet frequently presenting a very close resemblance to them. The subjects usually exhibit at first the symptoms of common catarrh. After a few days the voice becomes hoarse ; the cough become croupy, and there is tightness, oppression, and some approach to the croupy sound of respiration ; there is, however, no intense or exalted action of the respiratory muscles, and no indication of that mechanical impediment to the current of air which exists at the rima glottidis in the two first forms of the disease. Still the resemblance is sometimes quite close enough to cases of these forms, in their earliest stage, to occasion some anxiety, and there is also sometimes a sudden attack of dyspnœa, with loud, shrill and sonorous breathing, which imitates the symptoms of the third form, and is perhaps to be regarded as an attack of the same kind.

The cases of this form yield gradually, the croupy character wearing off in a few days, and leaving behind simply catarrhal symptoms. I suppose them, from the mode in which they come on and go off, to

be properly a catarrhal inflammation of the mucous membrane covering the organs of voice. We frequently observe that the catarrhal affection of the same membrane which occurs in the first stage of measles, is accompanied by the same croupy symptoms as those which have been now described—going off with the other catarrhal symptoms. In a few instances the attacks of this form of croup have terminated in severe bronchitis, or in inflammation of the lungs themselves. But among the 56 cases included above, there was no one fatal.

Having thus described these several forms of this disease, and stated in general what seemed to be their nature, the question now arises as to the justice of the distinction which has thus been assumed to exist. Is there any sufficient ground for such a distinction? Are these different cases different diseases? Are not the favorable ones, which constitute so large a proportion of the whole number, similar in their nature to the more severe; only of less severity in their origin, or else modified and controlled in their course, by the influence of treatment. These questions it is obviously of great importance to the prognosis and treatment of the cases in question, to be able to answer correctly. If we can with regard to a large proportion of them confidently predict from the outset a favorable issue, the practitioner and the friends will be saved much unnecessary anxiety, and the patient many annoying and debilitating remedies.

I proceed, therefore, to state the grounds for a belief that the first form of croup is a disease essentially distinct from all the others, and that it depends on a peculiar pathological condition to which they have no tendency. Whether there be any equally marked distinction between the other forms, it is not of the same practical importance to determine; and as we have no sufficient materials for a satisfactory inquiry into the question, our attention will be confined to the evidence for the distinct character of the first form.

Every physician is familiar with an affection of the throat, both in adults and children, consisting in an inflammation of the mucous membrane, of that peculiar character which produces the effusion of a layer of coagulable lymph, or false membrane. The connexion of this affection of the throat with croup was long since pointed out; and it is well known to practitioners among us, that this complaint, known familiarly, though inaccurately, under the name of “ulcerated sore throat,” often accompanies or is followed by croup, and that croup thus connected is peculiarly fatal in its character. This circumstance in the history of croup was many years since strongly impress-

ed upon my mind by an eminent practitioner in this neighborhood. I was in consequence led, in all cases of croup, subsequently to this period, to make a careful examination of the fauces, with the view of determining exactly the extent to which this visible affection of the throat was connected with the more important disease.

Two causes prevent the completeness of these observations. We are very apt, in making record of cases, especially of those which appear of a slight degree of severity, to omit the *noting* of negative facts, even when they have been actually the objects of attention. Hence, although I have very rarely failed to examine the fauces in any case of supposed croup, I have often in the lighter cases, and sometimes in the severer, failed to note their condition. The second cause of incompleteness is the impossibility in some patients, from their terror and consequent resistance, of getting such a view of the parts as would authorize us to pronounce decidedly what their state is. Notwithstanding these circumstances, the state of the throat has been noticed and recorded in a sufficient number of cases to afford very fair materials for inference.

With a view to this examination, I may include a considerable number of other cases, besides those which constitute the particular subjects of inquiry in this paper, which have been noticed at other times, or in the practice of my friends. Including these cases with the 22 above referred to, I have memoranda, more or less complete, of 39 cases of what I have denominated membranous croup. The state of the fauces was observed and noted in 33, and of these, in 32 a false membrane was present; most frequently, and sometimes only on the tonsils, sometimes on other parts also, as the palate, uvula and pharynx. In one case no such membrane was present; but it was found to exist in the larynx after death. In three of these 33 cases, recovery took place; all the others were fatal. In 14, an examination was made after death, and the usual appearances were found to exist in all of them.

On the other hand, I have memoranda of 109 cases of what I have classed as the other forms of croup, and of these the state of the tonsils and fauces was noted in 45. In no one was there such a condition of the parts as was found to exist in the membranous form. In three cases there was indeed a thin, slight exudation on the tonsils, of the color and appearance of starch, like that which is sometimes seen on the edges and surface of the tongue. This I apprehend to

be a formation of an entirely different nature from that which exists in the other class of cases. Of the 45, 12 were of the second, 11 of the third, and 22 of the fourth class.

From this statement, it seems probable that the appearance of a false membrane upon the tonsils or other visible part of the throat, in a case of croup, may be regarded as a pretty certain diagnostic sign that it is the membranous form of the disease; and its absence as a pretty certain indication that it is one of the other forms. Still there will be exceptions. There will be cases in which the membrane is formed in the larynx, although it has not appeared in the throat; and there may be those in which a membrane exists in the throat, unaccompanied by a similar condition of the air passages. Of the former I have recorded one example; of the latter, none. How frequent such exceptions will be, must be determined by more extensive observations. If they are not more frequent than they have been among the cases here recorded, the observation of this symptom will afford a sufficiently safe guide, since of 75 cases in which it was looked for and the result noticed, it failed as a diagnostic sign in but a single instance.

The question now presents itself, what are the grounds for believing that the two forms of the disease which I have distinguished as membranous and inflammatory, are not the same in different degrees or in different stages? and may not pass one into the other? The grounds are—

1. The very great preponderance of fatal results in the membranous croup and a similar preponderance of recoveries in the inflammatory, and the evidence which exists that in the few cases of recovery from the former, the membrane has been formed, and in the few cases on record of death from the latter, that a membrane has not been formed—afford strong reason for believing that the diseases are essentially different.*

* No fatal cases having occurred of inflammatory croup under my own notice, I am happy to be able to avail myself, in support of the views above taken, of an account of four such cases, contained in the first volume of the *New England Journal of Medicine and Surgery*, by James Jackson, M.D., formerly Professor of Theory and Practice of Physic in Harvard University. The symptoms in all these cases were unquestionably those of croup. In one of them bronchotomy was performed.

In the first case, "the mucous membrane of the larynx was much inflamed, and smeared over with a quantity of loose mucus, but without any false membrane. The inflammation extended into the trachea as far as could be examined without opening the chest."

In the second case, "the appearances in the larynx were the same. The lungs were more full of blood than usual."

2. The formation of a false membrane does not seem to require either an advanced stage or a very intense degree of the inflammation from which it proceeds. It is rather the result of a peculiarity in the kind of inflammation, than of any period or degree of it. It appears to be a very early product of the inflammation, if it be not indeed almost contemporaneous with it. It resembles in this respect the similar effusion taking place on the serous membranes, which in them occurs very early, and has even been supposed to be the first act of inflammation. In the common inflammation of the tonsils which is accompanied by this symptom, a layer of lymph is observed to be effused over the surface of the part as soon as any signs of disease exist.

3. The circumstances attending recovery from simple inflammatory croup differ materially from those which accompany recovery from membranous croup. In the former the amendment is rapid and speedily complete. There is left behind only a moderate soreness of the larynx, and, in the worst cases, some hoarseness. There is at no time any copious or solid expectoration. In the latter, recovery is slow, unequal, and accompanied by phenomena which must neces-

In the third case, "there was not any coagulable lymph, the mucous membrane was highly inflamed and swollen, and the rima glottidis was thus very much narrowed. The membrane was smeared over with a thick mucus."

The fourth case I give at length in the words of the author.

"I was called to this on Sunday, July 5, 1812, at 3 o'clock P. M. The disease had commenced 20 hours before, and was very strongly marked. The symptoms were considerably mitigated after vomiting. I tried in vain to take blood; the child was very fat, and the veins were all hidden, even the external jugular. The respiration grew bad again before morning, but the patient lived till the next morning, the 7th, so that the disease continued two days and a half, or 60 hours. In eight hours after death, Dr. Bigelow examined the body, and the following is his report of the appearances. 'The trachea with the larynx was removed. The whole tube was pervious as usual, excepting the presence of a large quantity of mucus of the ordinary consistence. On dividing the larynx and trachea at the posterior side, and exposing the internal surface, the mucus being removed, a number of distinct red spots were discovered, of considerable size, on the lining membrane. One of these was immediately below the glottis. Between the mucus and the lining membrane there was no factitious substance whatever, nor any appearance the least resembling the membranes which I have seen formed in some other cases of croup. The lungs were not examined.'"

"In the other cases I had thought it possible that the disease had not continued long enough to allow the effusion to take place, as the patients all died in less than 48 hours from the attack. But in this last case such a supposition cannot be admitted; for I have in my possession a preparation in which the false membrane is exhibited in great perfection, and this came from a patient of Dr. Channing which I had seen with him, and in which death had occurred in about 30 hours after the seizure."—*N. E. J.*, Vol. 1, p. 383.

The history of these cases, especially with the authority upon which they are recorded, affords very satisfactory evidence of the existence of a class of cases like those which have been above described, of a disease with the symptoms of croup, but without the formation of a false membrane either in the air passages or upon the visible parts of the throat.

sarily attend the separation of the membrane, and the process through which the diseased mucous surface must go in order to its restoration to a healthy condition. The natural cure of the disease takes place by the occurrence of the suppurative inflammation upon the diseased surface, by which the false membrane is thrown off, and the mucous membrane then gradually returns to its natural state. In examinations after death, we usually find that this process has begun in the trachea, the membrane being there separated and often broken up into shreds, whilst the inflamed surface is covered by a layer of pus. Above, in the upper part of the larynx, around the glottis, the false membrane usually remains closely adherent. It is obvious that recovery might always take place could the parts be spared long enough from their functions to go through the necessary steps—and it is also obvious when it does take place, that it must be accompanied by a copious expectoration of pus, and of the membrane either in pieces, if firm enough, or else broken up and partially dissolved by the pus. Now these appearances do not accompany recovery from even the severest cases of the inflammatory croup, whilst they do accompany recovery from well marked cases of the membranous form.

Of the three cases of membranous croup which are noted as having recovered, there are but two of which I have such an account as would justify me in presenting them as fair examples of the processes through which the parts pass in recovery. These were both of the most decided character, and had arrived at that stage of the disease in which we expect a fatal event to occur almost from hour to hour. In the first of them, six days elapsed before any sensible mitigation of the symptoms, and even then the progress to recovery was very slow and apparently doubtful. Improvement was attended by a copious muco-purulent expectoration, in which it is true no large pieces of membrane were ever detected, but of such a consistence and appearance as would favor the belief that the membrane had escaped in a comminuted or partially dissolved state. After the probable removal of the membrane, there was for some days a bloody expectoration, the voice did not return, and it was indeed many weeks before it resumed its natural tone.

In the second case, a considerable portion of the membrane was spit up in a tubular form, after a violent fit of suffocative cough, and this was followed by the rejection of smaller pieces, mixed with a muco-purulent, at first, and then a bloody expectoration. There

continued an entire loss of voice for more than a week, and for at least ten weeks after recovery it had not regained its natural tones.

The contrast is very striking between the protracted character of these recoveries, and the speedy return to health of all those who labored only under the other forms of the disease, however severe.

The observations to which the preceding remarks relate, were all made in this city and its immediate neighborhood; how far they correspond to the disease as it appears in other places, must be left to others to judge. So far as they go, they appear to me to justify the following conclusions.

1. That the only form of croup attended with any considerable danger to life, is that which is distinguished by the presence of a false membrane in the air passages.

2. That the existence of this membrane in the air passages is in a very large proportion of instances indicated by the existence of a similar membrane in the visible parts of the throat.

3. That this affection differs not in stage or degree, but in kind, from all the other cases which are commonly known by the same name, and that the latter have no tendency to become converted into or to terminate in the former.

As my intention has not been to write a complete history of croup, I have omitted all such notices of the symptoms, cause, morbid anatomy, &c. of the disease as have no direct bearing on that point in its character which it was my desire to illustrate. It may not be amiss, however, to record, in connection with this paper, a few circumstances with regard to its history, which have been determined from an examination of the cases before us.

Croup is often regarded as a disease which attacks suddenly and violently. 'This is only true of the milder forms. Genuine or membranous croup is commonly rather gradual in its approach, and consequently often insidious. It supervenes often on the common sore-throat of children; and in such cases, though its development is frequently rapid and apparently sudden, yet a careful examination of the past history of such a case will generally satisfy us, that although it may have had a sudden outbreak of violence at the time it was supposed to begin, yet that it had really been coming on for several days. Of 30 cases in which I have had an opportunity of determining the mode of attack, in only two could it in any proper sense be called sudden, although in many, the attention of friends was called to it quite unexpectedly, by a rapid increase in the violence of the

symptoms. A sudden and violent attack is, therefore, to be regarded as affording a favorable indication of the character of the case in which it occurs. The unexpected manner in which croup sometimes steals upon the common sore throat of children, should lead always to the careful inspection and watching of such cases. It is true that but a very small proportion of them do terminate in this way ; but as it is the only considerable source of danger, and the only way in which they are likely to have a fatal termination, the possibility of such a course of things should not be overlooked. No case of this kind can be regarded as entirely safe from such a result. The danger is even not confined to childhood. Two of the above named cases of fatal croup occurred in females of 12 years of age, in which it had supervened on this affection of the throat.

The membranous croup also sometimes occurs as a sequel to the affection of the throat in scarlatina. The most common primary affection of the throat in this disease, is of the same kind with that denominated the ulcerated sore throat, viz. an inflammation with an effusion of false membrane upon the parts inflamed. When croup supervenes upon this, the case is usually very rapid and inevitably fatal. Of the cases above enumerated, two were of this character. A third occurred to me, not enumerated among them, in which there were no symptoms of croup during life, the patient apparently dying from affection of the brain, but in which the usual appearances of croup were found after death. The subject of this was a young man 17 years of age. These cases all occurred between eight and ten years since. None have been observed during the more recent periods of the prevalence of scarlatina.

Croup varies considerably in its duration ; I mean its duration after its characteristic symptoms are fairly developed and there is reason to believe that the membrane is formed. Of 23 cases,

1 continued 1 day from distinct croupy symptoms.

6 " 2 to 2½

9 " 3 to 3½

3 " 4

1 " 5

1 " 9

1 " 11

1 " 19

Nineteen cases, or more than three-fourths, therefore, were of four days duration or less.

Croup, in this form, rarely attacks children under two years of age. Of 30 deaths and 3 recoveries, of which the ages were known,

Deaths.	Recoveries.		
1	0	took place at	12 months.
1	0	"	18 do.
5	0	"	2 to 2½ years.
3	0	"	3 to 3½ do.
8	0	"	4
6	1	"	5
2	0	"	6
0	2	"	7
1	0	"	8
2	0	"	12
1	0	"	17

Twenty-two, or two-thirds of the cases, occurring between the ages of 2 and 5.

It will be seen by the following statement of the ages of 95 patients affected with croup of the other varieties, that the tendency to the disease in them exists at a much earlier age. Whilst but one case in 16 occurred under two years of age in the first class of cases, 23 out of 95, or about one in four, happened under the same period among the others.

Age.	Second form.	Third.	Fourth.	Total.
Under 1	1	1	3	5
1 to 2	2	5	11	18
2 to 3	6	6	11	23
3 to 4	2	8	5	15
4 to 5	1	6	3	10
5 &c.	1	3	3	7
6	1	1	2	4
7	1	2	5	8
8	0	0	2	2
9	0	1	0	1
10	1	0	0	1
11	0	1	0	1
	<hr/> 16	<hr/> 34	<hr/> 45	<hr/> 95

In cases of the first kind, the tendency to the disease seems to be about equal in the two sexes. Of the 22 cases embraced in this inquiry, the number of each sex was precisely the same—11 males and 11 females. Adding to them 12 other cases in which the sex is

noted, we still have numbers too nearly equal to indicate any peculiar tendency to the disease in either sex, viz. 16 males and 18 females.

In cases of the other forms of croup, the difference seems too great and too uniform to be merely accidental. In

18	cases of 2d class,	11	males,	7	females.
35	" 3d "	25	"	10	"
56	" 4th "	33	"	23	"
		<hr/>		<hr/>	
		69		40	

As it is of some interest to observe the degree of influence which season is capable of having on disease, I subjoin a table containing a statement of the numbers occurring in the different months, of the cases referred to in this paper. As the number of cases, however, is too small of the first class to afford any very satisfactory result, I have added in another column the number out of 263 deaths from croup, occurring in the several months, drawn from the bills of mortality for this city. I have made the table to begin with November, for the sake of comparing more easily the cases and deaths of the colder half with those of the warmer half of the year. I should observe that the several years vary very much in the amount of mortality of the several months. Thus in the month of January, there was in one year 13 deaths, in another year only one, and a similar though less remarkable inequality in other months. Still the results are upon the whole too uniform to leave any doubt of the greater tendency to these diseases in certain periods of the year.

	Membranous Croup.	Other Forms.	Deaths from Croup.
November	2	11	31
December	2	11	31
January	9	14	31
February	2	18	22
March	2	9	33
April	2—19	17—80	18—166
May	4	9	14
June	3	6	11
July	1	3	13
August	2	0	13
September	2	5	16
October	3—15	7—30	30—97

ART. IV.—*Tubercular Meningitis in the Adult.* By J. B. S. JACKSON, M.D.

IN the review of Becquerel's work on this disease in children, in the last number of this Journal, it is said to be uncommon in adults, and so I should suppose from the very small number of published cases that I have met with, and from the little that has been written upon it; it would seem to be an exceedingly common disease in children, and comparatively rare in adults. Le Diberder's article (Paris, 1837) is the only one that has treated of it expressly in the adult, one by Valleix (Arch. de Med., 1838) being merely a review of the first. Guersent, however (Art. Méningite, Dict. de Med. ou Rep. Gen., 1839), on this point, gives a table of 80 cases, of which 33 are over 15 years of age, and the result of the few which I have seen goes to establish even a larger proportion in favor of adults.

The whole number of cases of which I have notes, is 16. In the first four, granulations in the membranes of the brain were not observed, as I was not then acquainted with the nature of the disease; of these, two were children, one was an adult, and the case, though rather equivocal, will be given with the rest; the fourth was merely the record of a dissection. Of the remaining 12, seven were adults. To these eight, will be added two others from the Records of the Massachusetts General Hospital; the dissection in these last having been made by Dr. Bowditch. The morbid appearances found in these cases will be analyzed, and it would be desirable to do the same with the symptoms; but, from their great variety, this was found to be impossible. I shall, therefore, give in the first place, a very short summary of the history of each particular case.

1. Mr. C., æt. 22, had had for a long time a frequent, short cough, and before sickness, much headache. Six days before death, which occurred June 19th, 1834, was taken with what appeared to be simple fever. On the 15th, came on insensibility, which continued; nothing peculiar about eyes; pulse from 44 to 144. This was the case in which granulations were not observed in the membranes of the brain; neither is anything said of lymph, though I have no doubt that it was intended in the record, "some appearance of recent inflammation in membranes at base." In the lungs there were an abundance of miliary granulations, a form of disease which is often found in these organs in the tuberculous meningitis of adults as well

as of children ; the same also in false membrane over the liver and spleen.

2. Mr. B., æt. 20, had been supposed to have chronic spinal disease. Learned after death, from his employer, a very intelligent man, with whom he had lived for the last six years, that during that time he had been subject to headache. For the last six months, loss of motion of the upper extremities, but not of sensation, and six weeks afterwards a similar affection of the lower extremities. Headache continued, with occasional blurring of sight, but mind entire to the last ; appetite craving ; bowels well. Some cough for two or three weeks a few months before death, which occurred February 11th, 1837, but disease of the lungs never suspected. Besides considerable tuberculous disease of the lungs and peritoneum, there was some in the brain, with granulations and much chronic disease of the membranes ; the amount of lymph, however, at the base was small, but it is remarkable that there should have been any without the existence of acute symptoms.

3. Miss M., æt. 27, died March 4th, 1837. Delirious most of the time for the last two or three weeks, and for two or three days before death objects appeared multiplied. Headache for about four months, and for the last few weeks so severe as to require large doses of narcotic medicine. Besides the disease in the membranes, there was extensive tuberculous disease of the brain in this case.

4. Miss D., æt. 20, died April 12th, 1837. From December 1st, severe headache and imperfect hemiplegia, with irregular motions of the left side. December 25th, had two fits, after which she became better, and for a time thought herself well. February 6th, the symptoms returned, with slow pulse, the stomach and bowels being well. March 10th, another fit. March 29th, came on the acute symptoms ; delirium, occasionally giving way to coma ; pupils dilated ; headache often severe ; fit on the 3d and again on the 5th of April ; on the day of her death, apparently some consciousness. This patient had no marked thoracic nor abdominal symptoms, being rather fleshy even at the time of death. There was, however, pretty extensive ulceration with tuberculous disease of the intestines and an abundant deposit of miliary tubercles throughout the lungs ; in the right hemisphere of the brain some tuberculous deposit, which may have been connected with the hemiplegia, and yet the amount was nothing compared with what was found in the last case, in which paralysis was not a prominent symptom, even if it existed.

5. Miss D., æt. 28, died July 3d, 1837. Previous health good, and at the time of her death moderately fleshy. For three weeks, severe pain in top of head, with dizziness, obliging her after a few days to give up work; appetite small; bowels loose. June 28th, delirium came on, and for the last two days complete stupor. For four days left eye closed, with permanent dilatation of pupil, and before death the head and the mouth were drawn to the right side. Extensive tuberculous disease in abdomen and thorax, with gelatiniform softening of the left hemisphere of the brain, besides the disease of the membranes.

6. Mr. L., æt. 21, carpenter, large frame and strongly developed, died August 7th, 1837. Had not looked quite as well as usual since an attack of cholera morbus one or two months before death. Had also been much exposed to the sun on the roof of a large new building, on which he had been very hard at work. July 21st, headache came on and was an urgent symptom, so long as he could complain of anything. Vomited on the 24th, but not much afterwards. On the 25th he was induced to go to Nahant on a fishing excursion, and suffered much in consequence. On the following day active delirium came on and continued with much irregular motion of hands and arms, picking and working at bed-clothes; would however give a rational answer when spoken to; stupor for the last three days. Some appetite; tongue never dry nor brown; bowels quite costive throughout disease. General aspect that of typhoid fever, the disease of all others for which this is most likely to be mistaken. Strong and healthy as this man seemed to have been, there was a large mass of tuberculous disease in the bronchial glands.

7. Mr. B., æt. 24, died March 4th, 1838. Had been regarded by his friends as consumptive. Very little known of early history, but, for the last eight or nine days at least, there had been for most of the time, active delirium, with watchfulness, wildness and suffusion of the eyes, dilated pupils, rapid pulse, a dry, brown tongue, retention of urine, involuntary dejections when cathartics were given, and altogether great prostration. On dissection, extensive tuberculous disease of kidneys and genital organs, and the lungs crowded with granulations, besides the disease in the membranes of the brain.

8. Miss E., æt. 8, died May 11th, 1838. Had always been subject to headache and melancholy, and had twice had severe acute rheumatism; last attack in January, but had got about well in April. May 2d, there came on vomiting of a green fluid, which continued actively

for some days ; much headache ; drowsiness, which for the last two or three days amounted to complete stupor ; bowels costive, but not obstinately so. The disease in the head was comparatively slight in this case.

9. Miss C., æt. 26, died July 20th, 1840. Previous health perfect. On the evening of July 4th, was out on the roof of a house to see the fire-works, and was taken sick in the night. Gave up work on the 6th. Headache from the time of attack, with sense of confusion, and noises in the ears. Very restless, often getting out of bed. Mind very early affected, but no proper delirium ; soon became stupid, but during the last 24 hours, roused so as to give correct answers. Pupils permanently dilated, and for the last four days the left eye was closed. Vomiting and diarrhœa at first, and throughout the disease the bowels were easily moved. Urine freely secreted, as it very often seems to be in these cases ; excretions involuntary towards the last. Chills at first ; not much heat, but face flushed, with some suffusion of eyes, the general aspect being that of common continued fever. On dissection, considerable tuberculous disease of the lymphatic glands, with miliary granulations in the lungs. The examination I saw, also the patient many times during life, but took no notes of the case, as I knew it would be fully detailed in the Hospital Records. The case is remarkable for the entire absence of chronic symptoms, also for the state of the bowels, which are generally much constipated in this disease.

10. Miss L., æt. 23. The following minutes are from the Records of the Hospital, where the patient died, February 7th, 1842. Was taken with catarrhal symptoms, January 10th, from which she had nearly recovered, when, on the 21st, there came on fever, with headache, dizziness and confusion of mind. Nausea early in sickness. Bowels costive. Countenance suffused, sometimes approaching to lividity ; expression vacant. Headache does not seem to have been an urgent symptom, and on one day was reported as wanting ; nothing said of delirium. On the afternoon of February 5th, she became unconscious, with permanent dilatation of right pupil, and so continued till the morning of her death, when she roused so as to speak and swallow. This was the only case of which I did not see the dissection, and I regretted it exceedingly, as it proved a solitary exception to the rule as to the existence, in these cases, of tubercles in the lungs or bronchial glands, an exception so rare that Guersent, in the work above quoted (p. 107), has found but one instance re-

corded. Dr. Bowditch, who examined all of the organs with the most scrupulous care, described the granulations in the brain as numerous, quite small, rather soft, white bodies upon the arachnoid and pia mater; numerous in fissure of Sylvius on each side, on base of brain and in membranes about the fourth ventricle; some on the vertex and between the hemispheres, and some in each plexus choroides. Recent, white, soft lymph to the extent of one inch about optic nerves. Brain quite healthy except for softening of central parts. It seems to me that this description applies sufficiently to a case of tubercular meningitis, and that it must be received as such, whatever the rule may be.

The general symptoms and the progress of the disease varied much in these cases, as above remarked, and considerably more, I should say, than when it occurs in children. As to the authority for the above histories, five (Nos. 4, 5, 7, 9, 10) are from the Records of the Massachusetts General Hospital; the rest were obtained from the attending physician and the nearest friends of the patients. This diversity of symptoms will perhaps be explained by what follows, nearly all of the cases being complicated with other grave disease, either in the brain itself or in the distant organs.

The dura mater was noted as healthy in Nos. 2, 3, 4, 6, 7, 8, 10; injected in No. 9, and in No. 5 a small ossific deposit.

In all, the arachnoid was noted as more or less dry over convexity of hemispheres, except in Nos. 1 and 9; in No. 5 it was also thickened and rough over the left hemisphere, probably from disease of the brain beneath. This is directly at variance with the remark of Becquerel, who found serous effusion in the cavity of the arachnoid in children in five out of 27 cases, and the same generally beneath this membrane. In 2, 5 and 6 there was a thickened, opaque appearance of this membrane at the base of the brain, and in No. 2 a milk-white opacity beneath and between the anterior lobes and about the cerebellum.

Vessels of the pia mater moderately congested in 3, 4, 6, 7 and 8, more than usual in No. 2, and less in No. 5; in 9 and 10 much injection of membrane about granulations. In eight cases there was very little or no serous effusion in membrane over convexity of brain; some in No. 9, and in No. 1 no record. At the base of the brain, on the other hand, there was a considerable amount of serous effusion in 2, 4, 5, 6, 7 and 9; very little in No. 8; in 1, 3 and 10, no record. In 2, 3, 6, 7 and 8, the membrane had a thickened, fleshy appearance

about the granulations, being semitransparent in No. 7, but red in all the rest; in 1, 4 and 5, no record.

Granulations in the membranes in every case, except the 1st, which was examined before I was acquainted with the nature of the disease; generally firm, semitransparent, and varying in size from a mere point to that of a large pin's head; a few were opaque. In Nos. 9 and 10 they were opaque, being soft in the last and not hard in the first. Proved in many instances to be in the pia mater, and in two cases they seemed to be arranged along the course of the vessels, as they are often found to be in children. Situated about the base of the brain; in all but Nos. 1 and 2, they were noted as being found in the fissure of Sylvius, though not on each side in every case; in 4, 6, 7 and 10, beneath or between the anterior lobes of the brain; in 3, 5, 6 and 10, upon the convexity, and in 5, 7 and 10, about the cerebellum; in 10 there were, and in 5, 6 and 7 there were not, any in the plexus choroides. These granulations are generally thought to be of a tubercular nature, and to be formed previously to the lymph, this last being denoted by the access of acute symptoms, whilst the granulations are marked by more or less chronic disturbance; according to Guersent, it is exceedingly rare that they are latent, whilst tubercles in the substance of the brain are so in one third of the cases. I have never but twice met with granulations in the membranes without lymph, and one of these cases I would here give, inasmuch as the symptoms were decidedly those of an acute disease. The dissection I saw and well remember; but, having made no record, Dr. John Ware, in whose practice the case occurred, has kindly furnished me with the following summary from his notes. Mr. H., æt. 30, had had cough for some weeks when Dr. W. was first called, January 28th, 1840, from which time the case went on as one of typhoid fever, though never having the physical signs of that disease. Generally the tongue was dry, brown and crusted, with sordes on the teeth, and subsultus; pulse not much accelerated till towards the last; active delirium or coma most of time for the last ten days; talking much and catching at imaginary objects; much headache, with knitting of brows; no dejections except from medicine, and excretions sometimes involuntary. Kept his bed about three weeks, and died February 9th. On dissection, a few granulations were found in the pia mater in the usual places, but no lymph; brain watery, with some softening about right ventricle. Lungs filled with miliary tubercles, there being as many in the

lower as in the upper part; also tuberculous disease in right renal capsule and cadaveric softening of stomach.

Recent lymph was noted at the base of the brain in every case, except in the 1st, in which it probably existed, as there was reported "some appearance of recent inflammation in membranes at base," and this expression would not have been used if there had been serum alone. The lymph was yellowish or greenish yellow, except in No. 10, in which it was white; apparently beneath the arachnoid, and infiltrated with serum. In No. 2, the exact situation was not noted; in all of the rest, except the 1st, it was found about the optic nerves; in 3, 4, 5, 7 and 9, it had extended to that quadrangular space bounded by the optic nerves, the pons varolii, and the middle lobes of the brain, and in 4 and 7, over the pons; in 6, 8 and 9, it was found about the cerebellum, and in No. 9 in the fissure of Sylvius, and in the membrane over the pineal gland, with a trace at the vertex. The membranes being otherwise much diseased in the fissure of Sylvius, it is remarkable that there was not lymph there, but none was found, except in No. 9, and perhaps a trace in No. 3. Becquerel found pus in the membranes of children several times; but in the above cases I am quite sure that I never saw it; it is only mentioned once, and then as being absent.

The brain, when first exposed by raising the dura mater, appeared swollen and the convolutions flattened in 2, 3, 5, 6 and 7; in 1, 4, 9 and 10, not noted, and in No. 8 is reported no flattening. The color, consistence and degree of moisture of the organ was for the most part healthy. As to the softening of the central parts, which is so often found in children, the septum was found softened, almost to diffuence, in 5, 6, 7, 9 and 10, also the fornix in No. 10, and the posterior horn of both lateral ventricles in No. 9; in No. 7, the surface of the optic thalami posteriorly and of the tubercula quadrigemina were pulpy, and yet the cerebral substance above was dryish like putty. In No. 4 the anterior part of the left lateral ventricle was almost liquified; but this, it was thought, may have been made in the dissection, the septum being firm. In No. 8 very little if any softening of the septum lucidum; in No. 1 the central parts were rather firm, and in 2 and 3 the fact is not noted. The quantity of serum in the lateral ventricles in No. 3 was $\frac{3}{4}$ iij., in No. 1 $\frac{3}{4}$ ij. to iij., in No. 7 $\frac{3}{4}$ i., in No. 6 $\frac{3}{4}$ ij. or ijss., in No. 4 $\frac{3}{4}$ iss. or more, in No. 5 $\frac{3}{4}$ i. and in No. 9 the ventricles are reported as distended with fluid. In No. 1 the brain was greatly congested. In No. 5 there

was extensive disease about the middle of the left hemisphere, characterized by a yellow color, softening which in some parts was extreme, and a peculiar gelatiniform appearance; not defined, but equal in extent to about two inches square. Within the yellow portion, and contrasting strongly with it, were many small vessels filled with dark red coagulated blood; this disease Cruveilhier regards as a chronic affection, but I have met with it several times in acute cases.

Well-marked tubercles were found in the substance of the brain in four of the ten cases. In No. 2 there were three in the cerebrum, and one in the cerebellum, from three to nine lines in diameter; in No. 3 there were ten in the cerebrum from two to three lines, and ten in the cerebellum from three to five lines; in No. 4, three or four in the cerebrum of the size of peas, and in No. 5 one in the cerebellum about as large. Some of these were greyish and transparent, but they were almost wholly opaque, partly firm and partly curdy or softening. They were situated in the grey substance, extending into the white, and were often connected with the pia mater, from which they would seem to have originated, if many had not been found separate from it. In No. 7 there was a doubtful tubercle, and in 6, 8, 9 and 10 it is reported that there were more. The proportion in which the brain was tuberculous in these cases is quite large, considering the age of the subjects. Becquerel having met with this complication in five only out of 17 cases in children, in whom, according to the general observation, tubercles tend much more than in adults to affect a variety of organs besides the lungs. Tubercles in the substance of the brain are generally thought to produce much less irritation than when in the membranes, and often to be quite latent, but, in the present cases, they probably went far to account for the chronic symptoms under which the patients labored.

In the thorax there were more or less old pleural adhesions in 1, 2, 3, 4, 5 and 7, and in 2 and 6 acute inflammation of the membrane.

The lungs were tuberculous in all of the cases except in No. 10, as above remarked. In 1, 2, 3, 4, 5, 7 and 9 the form of the disease was peculiar; the tubercles were scattered throughout the organs, being in some very numerous; remarkably uniform in their appearance, miliary, semitransparent, greyish, firm, rounded, and varying from the size of a pin's head to that of a turnip seed; sometimes two or three would unite to form large masses, and some were slightly opaque; in some also one or two large and curdy masses were found,

seeming to be of a much older date than the rest; in No. 2 only was an abscess found, and that would contain about $\frac{3}{4}$ i. In the two other cases, Nos. 6 and 8, the tuberculous disease was slight, and evidently latent—otherwise the lungs were healthy, except for some lobular pneumonia in No. 10, some low degree of pneumonia in No. 6, and compression of one of the lobes in No. 2 by fluid in the pleura, the result of acute inflammation.

The bronchial glands were healthy in 5, 7, 9 and 10; cretaceous matter in No. 2, and opaque, curdy matter in 3, 4, 6, 8. In the two cases, Nos. 6 and 8, in which the tuberculous disease in the lungs was slight, it formed very large masses in the bronchial glands, in one from 1 to $1\frac{1}{2}$ inches, and in the other from 2 to $2\frac{1}{2}$ inches in extent; such a disproportion is occasionally found in children, but I should think was quite remarkable in an adult. Here may be mentioned a chain of much enlarged, tuberculous, lymphatic glands in No. 9, passing up on each side of the thoracic aorta, besides one in the neck and one about the duodenum.

The heart was enlarged in No. 7, the left ventricle being thickened, and the lining membrane of the left auricle, with the mitral valves, being diseased. In No. 8, a rheumatic subject, there was very slight disease in the valves, with some old adhesion of the pericardium. In the other cases the organ was healthy.

In the abdomen, there was well marked and pretty extensive tuberculous peritonitis in Nos. 2 and 5; in No. 1, universal old adhesion about right lobe of liver and spleen, with fine, semitransparent granulations in the false membrane. In the other cases the peritoneum was noted as healthy, if at all.

The stomach was examined in seven cases. In 2, 5 and 10 there was cadaveric softening, and in 9 and 10 there was considerable injection of the mucous membrane, but the others were not remarkable. The occurrence of softening in this disease has been a point of considerable interest.

The intestines were examined in eight cases. In No. 4 there was a considerable amount of ulceration, both in the large and small; in the last evidently tuberculous. In No. 5, two recent ulcers in small intestine, not tuberculous, and one old ulcer in large. In No. 7, redness, softening and thickening of two or three Peyer's patches, and in No. 6, acute inflammation of the last 18 inches of ileum. In No. 9, some appearance in large intestine like the cicatrices from previous ulceration, and in No. 10 two minute ulcers in rectum. Otherwise the intestines were healthy.

In Nos. 7 and 9 there were in the liver many minute, slightly opaque granulations, both on the surface and in the substance of the organ. In No. 2 there was a peculiar disease which I have met with in children, and which is described and figured by Cruveilhier, being apparently an inflammation of the minute bile-ducts; several small cavities were found, varying from one to three lines in diameter, the smaller being filled with a thick, greenish fluid, apparently bile; the larger containing the same with a mixture of pus, the inside of these cavities being lined with something like lymph, whilst the smaller ones were not. In the other cases the organ was well.

Spleen reported healthy in 4, 5, 6, 7, 9 and 10.

Kidneys in 1, 2, 3 and 8 not examined. Healthy in 4 and 6, except for congestion. In No. 10, the case in which there were no tubercles in the lungs, there was in one of the kidneys a small, yellowish, caseous deposit; also in No. 4 a doubtful tubercle. In No. 9 there were a few small, opaque, tubercular looking bodies in these organs. In No. 7 the left kidney was almost wholly destroyed by tuberculous disease, the remaining portion of the organ, at its thickest part, measuring only one third of an inch; three large abscesses existed in the substance of the organ, and there evidently had been others which had opened into the pelvis; the other kidney contained much tuberculous deposit, but not yet softened; the secretion of urine in this case had been very copious, and even after death there were found z xxij. in the bladder. In No. 5, a few tubercles in both kidneys, opaque, white, and of the size of pins' heads.

In No. 7, besides z xxij. of urine, as above stated, the bladder contained a small quantity of dark coagulated blood, with a thin layer of curdy matter on the inner surface posteriorly, the surface being generally rather red; in No. 6, z x. or xij. of urine; in No. 1, a large quantity, though it had been regularly drawn off; in No. 9, bladder distended; in No. 10, some urine, and in 4 and 5 the bladder was nearly empty; in 2, 3 and 8, no examination. The secretion in some of these cases was certainly quite remarkable.

In No. 6, besides the extensive diseases of the kidneys, there was a small tuberculous abscess in the epididymis, opening externally, and, the vas deferens being cut open throughout, was found to be enlarged in three different places, each of the cavities being filled with a thin, tuberculous matter. The corresponding vas deferens was about two-thirds as large as the other, and its cavity nearly obliterated. The prostate gland was almost destroyed by an abscess

which opened largely into the urethra, the remaining portion containing a considerable tuberculous deposit; in this diseased mass were 22 minute calculi, such as are occasionally found in the gland.

The uterus in No. 5 was closely connected with the rectum by old adhesions, and had a fibrous tumor growing from the fundus; cavity filled with tuberculous matter, and the Fallopian tubes distended with the same; the substance of the organ, also, to some depth beneath the inner surface, contained an abundant tuberculous deposit. In Nos. 8 and 9 there were some appearances which may have been connected with menstruation; in 4 and 8 nothing remarkable, and in No. 3 the organ was not examined.

Le Diberder saw 13 cases of this disease at La Pitié in the course of ten months. Of these he analyzed five, and on comparison with the above, I find several points of difference, of which the following may be mentioned. In all of his cases the arachnoid was moist, being sticky only in one. The sub-arachnoid effusion was in moderate quantity, and proportioned to the length of the agony. The tubercles in the membranes in two cases were as large as hemp seed and yellowish, and in two others they were as large as peas, yellow, and broke into a pulp between the fingers; I have found no approach to such distinctive characters in the granulations. Tubercles in the brain he does not mention. The lungs more tuberculous, and the bronchial glands less so than in the above cases. The stomach was never softened, and tuberculous disease in the abdomen less than in the above. Of his 13 cases, one only was a female, whereas in the above 10 there were six. Lastly, in all of his five analyzed cases, phthisical symptoms preceded, the intelligence and senses being perfect.

Reviews.

1.—*Traité des Neuralgies, ou Affections Douloureuses des Nerfs.*
Par F. L. I. VALLEIX, Medecin du Bureau Central des Hopitaux, &c.

A Treatise on Neuralgia, or Painful Affections of the Nerves. By
F. L. I. VALLEIX. Paris, 1841. Octavo. Pp. 719.

NEURALGIA is one of those diseases for the history of which we are indebted to the investigations of comparatively modern times. The early writers indeed allude to such affections, but evidently they did not distinguish between these and rheumatic and convulsive diseases. About the middle of the last century there appeared treatises on tic douloureux of the face, by André and Fothergill, as well as one by Cotugno on sciatica and femoral neuralgia. In the early part of this century, Chaussier published his synoptical table of the neuralgias, and, dating from this publication, we have several professed treatises on the subject, as well as a great many observations scattered through the different journals. But, as the disease is so painful, authors have rather been disposed to overlook the preliminary important considerations, and to endeavor at once to find out and prove the efficaciousness of therapeutical agents. A well-digested work on the subject then was much wanted, and such a work we find in the book before us. M. Valleix is of the school of observation; he has dedicated his book to M. Louis, and, as we should expect, he puts before us several new cases, related with great exactness and minuteness, and analyzed in a very clear and happy manner. But this is not all. Many have reproached the members of the school, to which M. Valleix belongs, with a total disregard of the labors of the distinguished members of the profession in past ages. Our author has freed himself from any charge of this sort, by a careful search of the records of the past, and by a judicious selection from the labors of those who have gone before him. It is not merely a clear and exact statement of the results of his own observation that he would give us, but, at the same time, by a thorough examination, a careful comparison and a sound criticism, he strives to make us appreciate the extent and the limits of our previous knowledge.

Our author commences with a definition of neuralgia.

“ A pain more or less violent, the seat of which is along the course of a nerve, disseminated from circumscribed points, which are true centres of pain, from which lancinating or other analogous pains shoot at varying intervals, and on which, pressure, properly made, is more or less painful.”

We may notice then at once, that our author does not propose to consider those pains of the viscera, in which the functions are more or less deranged, but without any apparent organic lesion, and which have been described under the name of visceralgia. Nor does he treat of those lancinating pains shooting over different parts of the body in organic affections, as in cancer. Acknowledging in them a certain resemblance to neuralgic pains, he finds that in other points there are essential differences, so that they cannot all be grouped together with advantage. He confines himself then to a study of the pains in the course of the principal nervous trunks which ramify over the surface of the body. These he considers in seven chapters, distinguishing the different forms of the disease by names taken from the nerves, in the course of which the pain is felt. An eighth chapter is devoted to a general consideration of the disease. We propose to follow the author in his own method, and we shall endeavor to dwell on whatever is peculiar to him, with as much detail as our space will admit.

We begin then with trifacial neuralgia. M. Valleix commences with a history of the disease. He then states that the number of facts offering the indispensable conditions for an analysis, is 55. Fourteen of these are new, 12 of them original, two communicated by a friend. He here takes occasion to remark that the common opinion of the great number of valuable observations to be found in books, is erroneous. Cases indeed abound, but so imperfectly related, taken with so little care, and often brought forward to support an opinion or a theory, that they are worthless. New cases, carefully observed, and stated with minuteness and precision, are much wanted. These 55 cases are now carefully examined and analyzed, and in this way the numerous points which come up as he goes on to study the disease, are considered and disposed of. Thus the seat of the pain was twenty-three times on the right side, twenty-one times on the left side, and twice on both sides. We see, then, that double neuralgias are very rare, and that one side of the face is not particularly predisposed to take the disease. But, in our author's definition of neuralgia, we have seen that he speaks of circumscribed

points as true centres of pain, from which lancinating pains shoot, and on which pressure is painful. These points correspond with those where the nervous filaments become superficial. Thus, where the supra orbital branch comes out to be distributed superficially, we have one of these centres of pain, which may be known as the supra orbital point. A less circumscribed point is to be found on the edge of the orbit, and this is called the palpebral point. A third point is on the side of the nose, a fourth in the globe of the eye. Five painful points are found in the course of the superior maxillary nerve, as the sub-orbital, the malar, the labial, the palatine, &c. In the course of the inferior maxillary nerve, there are again five points, as the temporal, the lingual, that of the articulation of the jaw, and that of the chin. Still further, there are painful points in spots where the different branches of the trifacial anastomose. Such a spot is that of the protuberance of the parietal bone, and we have here the parietal point.

We may now ask if any division of facial neuralgia, according to the seat of the pain, can be established. Let us look at the two following tabular views, the first prepared from the fourteen new observations, the second from seventeen cases already published.

Painful points in the	3	branches	7	times.
"	"	"	2	"
"	"	"	1	"

Painful points in the	3	branches	17	times.
"	"	"	2	"
"	"	"	1	"

We see, then, that the results of the two tables are nearly the same, that in by far the greater number of cases, all the branches of the nerves are affected. No one, therefore, can question the propriety of our author's determination to consider neuralgia of the face as one disease.

The character of the pain—it is excited or spontaneous. In the fourteen patients observed by our author, pain was always excited on pressure in one or more of the points which have just been mentioned. Of thirty-two cases obtained from various sources, in fifteen the same fact was noted. M. Valleix infers from this, that in all cases, with scarcely an exception, painful points on pressure would be found on a careful examination. For, the fact that they have not been mentioned in some cases, is not as important as their invariable

presence whenever their existence has been inquired into. In 26 cases these points were those where spontaneous pain was felt, in four cases there was pain on pressure but no spontaneous pain, in five cases there was spontaneous pain and no pain on pressure. But here we may ask, how is this pain on pressure to be reconciled with the remark of several writers, that the pain of neuralgia is relieved by pressure? M. Valleix thinks that this may be true where pressure is made over a large surface. He relates a case where the suffering of the patient was partially relieved by resting his forehead on the palm of his open hand, yet, in this very case, the slightest pressure with the end of the finger at the point of emergence of the frontal nerve, excited exquisite pain. Thus it is pressure over limited spots, which causes pain. Pains are also excited by mastication, deglutition and motions of the head. Of eight cases where mastication was almost impossible on account of the pain it excited, five times this pain was seated in the course of the ophthalmic branch of the trifacial, and three times the seat of the pain was along the inferior maxillary branch. In eight cases deglutition was painful, four times the pain was in the inferior maxillary nerve, once in the superior maxillary, and three times in the ophthalmic branch. Motions of the head were painful in two cases only, and in two cases pain was excited by any movement of the eye or of the tongue.

The spontaneous pains were of a twofold character. The dull continuous pain, less violent than the lancinating, was less endurable on account of its continuance. It was felt in all the different points which have been mentioned, but extended beyond those limits within which pressure was painful. This pain was generally in proportion to the violence of the disease. But the lancinating pain, intermittent, returning at variable intervals, often attracted, and almost exclusively, the attention of the patients. Every one experienced it; but in 10 cases only did the pain come on with the disease. There were only eight patients who complained of the pain towards the termination of the disease, at a period when pressure was still painful, and when the permanent pain remained.

These shooting pains did not always originate in the same point; still they always originated in one of the painful points. In 16 cases they followed the course of the nerve. In four cases they followed an opposite direction, in two patients the pains were felt in several directions. Sometimes the darting pain would seem to go over to the nerve of the opposite side. Their extent and their frequency were very variable.

There was not uniformly any thing remarkable in the condition of the organs to which the filaments of the trifacial nerve are distributed. In four cases there was suffusion of the eyes, with redness and photophobia. In 10 cases there was suffusion with redness, but no photophobia. In no case did the sense of smell appear to be affected in any way. In two cases a thin fluid and some mucus was discharged from the nostril of the diseased side. Noise in the ears was complained of by six of the patients who came under the observation of M. Valleix; in three of the cases the noise was heard in both ears. This symptom was generally marked in the access, and was, for the most part, in proportion to the violence of the shooting pains. In five patients the roots of the hair were very sensitive. M. Valleix has noticed salivation in three cases. Spasmodic or convulsive motions were found in only four of the cases observed by himself. But in none of these cases were there any violent contractions, so as to distort the countenance. In the cases related by different authors, 16 patients presented this symptom. And generally, in these cases, the convulsive movements were violent, and in all of them the disease was very severe. We see, then, that spasmodic movements, though an important, are not an essential, nor are they a characteristic symptom, of neuralgia. Nor, though much more frequent in the trifacial than in other neuralgias, is convulsion peculiar, as it is found occasionally in sciatica. The name of *tic douloureux* is consequently an improper name as applied to this disease, and the use of it has been the reason why the existence of the disease has not been recognized in several mild cases.

In seven of the 14 new cases, there were pains in different parts of the body. In five patients there were pains over the occiput, and in only one was there any pain in the course of the sciatic nerve. M. Valleix has not observed one pain to be replaced by another, in any case, but generally the different pains become more severe at the same time, and as the patient recovered, the different pains subsided nearly at the same time. Still, some most decided instances of this kind of transposition are recorded in books, and one remarkable case of the kind was communicated to the author by a friend. In one case the pain appeared to leave one side of the face and to be fixed in the other. These cases, though, are less frequent than has been supposed.

* The principal functions of the economy do not appear to be much affected in this disease. M. Valleix has not found any thing remarka-

ble in the respiration and circulation. In only 15 of the 55 cases is any thing said about the digestion, and in eight of these it was perfectly regular. In the other seven patients there was a loss or diminution of the appetite, nausea, occasional vomiting, slight colic, slight diarrhœa, at different periods of the disease. There was, however, no proportion between these symptoms and the greater or less intensity of the pain. In one patient there were slight chills, not accompanied, however, by heat or sweating. The general heat was slightly increased twice, so that facial neuralgia may be said to be still less a febrile disease, than the other forms of neuralgia.

The commencement of the disease was sudden three times out of 16, and in the majority of cases the different painful points were affected in succession, and the pain attained its greatest intensity gradually. In 10 of 46 cases, the periodicity of the affection was evident, and in four cases it was doubtful. The duration of the periodical attacks varied from one to seven hours, and more commonly there was only one attack in the 24 hours. M. Valleix notices the difference between his results and those of M. Rennes, who, in the space of fifteen months, observed 32 facial neuralgias, which were all more or less evidently periodical, and all of which recovered under the use of sulphate of quinine. There evidently was some miasmatic influence. It is a little remarkable, however, that trifacial is the only neuralgia which presents these phenomena. Irregular paroxysms were found in almost all the cases which have come under the cognizance of M. Valleix. Still, the disease cannot be regarded as intermittent, since the dull, prolonged pain continued to be felt, in the intervals of the paroxysms of lancinating pain. The duration as well as the severity of these paroxysms was very variable. In six cases the paroxysms were more frequent in the night, in eight patients they were less so, in seven they were as frequent in the day as in the night, and in eight cases they varied. In only two of 14 patients, were the paroxysms preceded by any symptoms. M. Valleix does not find that atmospherical variations have any influence over the paroxysms to cause them. In all the cases the disease disappeared gradually. The duration of the affection varied from ten minutes to three months. And, lest he might be accused of exaggeration, our author relates a case where the disease was perfectly well characterized, and yet where its duration was that of the first mentioned of the above periods. In three quarters of the cases analyzed by our author, the patients recovered; but this, like the other neuralgias, is

very apt to return. Of the 14 patients observed by M. Valleix, four suffered from a recurrence of the disease, after a longer or shorter interval of perfect recovery.

For the predisposing causes of the disease, M. Valleix consults the tables of M. Chaponniere as well as his own. It results from this examination that the four periods of ten years, between twenty and sixty years, are equally subject to the disease, which at the same time appears to be as frequent in one sex as in the other. Our author is not able to satisfy himself perfectly as to the influence of constitution and temperament. In the cases examined by himself, he does not detect any influence of hygienic constitutions. And the disease has appeared to be hereditary in very few cases. Of the 10 females whose cases came under our author's observation, there was only one who menstruated regularly. No case could be attributed to a syphilitic virus. Of 21 cases, more than half of them occurred in the three winter months.

As to occasional causes, eight of the 14 subjects of original observation knew of no cause. In five patients the disease appeared to follow exposure to cold. In one case the disease came on after the extraction of a tooth. The remark of M. Chaponniere, that caries or exostosis of the teeth is rarely a source of neuralgia, is confirmed in the researches of our author.

In the chapter on diagnosis, M. Valleix examines, with great care, the question whether there is any such thing as neuralgia of the facial nerve. This question, anatomically and physiologically, has been considered by M. Bérard, who has answered it in the negative. And of the pathological facts given as instances to prove the existence of this affection, many of them do not contain such particular statements as would justify us in coming to any conclusion, and those detailed with more minuteness, with the exception of that of Weisse, ought not to have the title given them by their authors. In cases similar to these last, the seat of the pain has been found to be in the occipital, not in the facial nerves. So that after a most careful study of all the facts, there is no proof as to the existence of a painful affection of those nerves.

Having thus far followed our author in what he has to say of trifacial neuralgia, let us open at his second chapter, in which he considers the cervico-occipital form of the disease. M. V. has not observations enough of his own, nor does he find a sufficient number in books to furnish the materials for analysis. He however invites our

attention, relating to us the eight cases which he has been able to collect. In these also, pressure, made on different parts of the head and neck, has been a valuable means of exploration. Several painful points were thus found out, as one between the mastoid process and the first cervical vertebra. This he calls the occipital point, as it corresponds with the spot where the nerve of that name becomes superficial. Another point, called the superficial cervical point, is situated where the principal nerves, forming the plexus of that name, emerge. Lancinating pains appeared also to the patients to exist in the ear itself. Still, as they were not deep, the seat of the pain must have been in the superficial branches by which the external ear becomes sensible. Some of the points were very limited, and might have been covered by the end of the finger. Where the nervous filaments anastomose freely, there the pain was more diffused. The lancinating pains seemed to commence sometimes from the sub-occipital region, and sometimes from just above the mastoid process; thence they seemed to shoot towards the posterior and superior part of the neck, or towards the parietal protuberance. Sometimes these pains, by the communications of the occipital and mastoid branches with the frontal branch of the ophthalmic and the superficial temporal nerve, pursued a course which might have been considered that of the facial nerve, and thus we may understand some cases which have been reported as neuralgia of the seventh nerve. The diagnosis of this affection cannot be difficult. In the painful points, in the direction of the lancinating pains, in the more or less violent periodical attacks, there is enough that is peculiar. In rheumatism of the neck, the movements of the head are painful, and especially so, when to effect them, the muscles must be strongly contracted. Pressure, too, causes a less severe, and at the same time a less limited pain than in neuralgia. The author's remarks on treatment may be considered more conveniently in the general view of neuralgia.

Under the name of cervico-brachial neuralgia, M. Valleix considers what have been described as several different affections by preceding authors. The cubito-digitalis, the supra-scapular, the external muscular cutaneous, as well as others, are all included under the one head of cervico-brachial. As might be supposed, then, the seat of this neuralgia is various, and yet so large and so numerous are the communications between the branches which form the brachial plexus, that it is altogether more convenient to classify the affections of the different branches together, notwithstanding the frequent occurrence

of cases where the symptoms are confined to the course of one of the nervous branches, and of its filaments. In the cases observed by M. Valleix, the cubital nerve is that which has been affected in the most remarkable manner. At the same time the painful points have been quite numerous and well marked. Thus in a case related by M. Valleix, there were two very distinct points in the axilla, one near the vertebræ, corresponding evidently to the posterior branches of the last cervical pairs, another seated perhaps in the supra scapular nerve. A third point on the deltoid, where the circumflex nerve winds round the humerus, and gives off its cutaneous filaments. Again there were painful points where the radial nerve winds round the humerus, and gives off its cutaneous filaments. Others, where the ulnar nerve is so superficial on its passage from the arm to the forearm; others along the fingers. In one case, the darting pains which commenced in one side of the neck, traversed the whole extent of the limb. In this form of neuralgia, the dull steady pain was found by M. Valleix to be uniformly present. Those who have reported observations of this disease, seem to have noticed only the shooting pains. Nor was there any doubt that the pain was increased by pressure. Our author's observations are not sufficiently numerous to authorize him to attempt to settle the course, duration, termination, and causes of the disease. Is an external injury ever a cause? Our author is inclined to the opinion that it may be so. At the same time, in his chapter on diagnosis, he reminds the reader that by this cause the nerve may be contused, and thus symptoms of local irritation may arise, which would be followed by pains of a neuralgic form. Such a case, reported originally by M. Piorry, is related in the book. The patient struck his elbow with considerable force, and a very sharp pain was the immediate consequence. Periodical, lancinating pains occurred in the following days. Another case observed by Dupuytren is cited, where pains were connected with the growth of a small tumor over the cubital nerve, and which disappeared when the tumor was extirpated. These cases are mentioned that the attention of the profession may be called to the subject, with a view to a thorough investigation of so important a point in diagnosis. The cases themselves contain too few details to satisfy any one. Muscular rheumatism may be distinguished, as the pain in it is over a more extended surface, as the lancinating pains are less severe and do not return periodically, and as the pain is greatest on motion.

In the fourth chapter, on dorso-intercostal neuralgia, we have a

subject on which M. Valleix had already published a memoir. Since that time he has observed several new cases himself, others have been communicated to him, so that there is not the same want of proper observation for this form of neuralgia, as for the two that have just been considered. And the disease itself is a frequent one. It is more often found in patients between 17 and 40 years of age. The greater number of patients were females, of a moderate constitution and of a nervous temperament. In only two cases was there reason to suspect a damp and cold dwelling as a cause. The greater number of relapses, however, took place in winter. In no case did the disease come on after sudden exposure to cold. In this connection our author discusses the question whether this form of neuralgia is generally symptomatic of disease of an internal organ. M. Bossereau, in a thesis which was published a short time ago, maintained that this form of neuralgia in females was almost invariably accompanied with some uterine affection. Thus, in seven patients reported by this author, the catamenia were irregular, there were pains in the lower parts of the bowels which preceded those of the back and of the parietes of the chest. In four cases of neuralgia of the left side, the left side of the neck of the womb was very tender on pressure. Again, in two cases, a double intercostal neuralgia was accompanied by tenderness of both sides of the neck of the womb. M. Valleix, as usual, where it is practical, refers the question to an examination of the facts. According to his analysis, there is some trouble of the uterine functions in nearly the same proportion of cases of sciatica and of trifacial neuralgia, as in those of dorso-intercostal pain; then, as to the existence of pain in the uterine neck, the very fact that this pain is confined to one side, on which M. Bossereau dwells so much, proves his interpretation to be incorrect. For, as this pain is by M. Bossereau himself supposed to be connected with a degree of inflammation of the womb or of the organs connected with it, we ought to find cases where one half of the uterus has been the seat of inflammation, the other half being free from disease. But M. Valleix has looked through all medical literature without finding a single similar case. He himself has observed this pain, and with it a pain in the hypogastrium, also confined to one side; but considering them to be painful points, such as he finds in all neuralgias, he calls the disease a lombo-abdominal neuralgia. And he asks, is it more strange that in an affection of nerves so widely distributed, there should be some disordered function in an organ to which filaments from these very

nerves are distributed, than that the eye should be red and suffused in trifacial neuralgia? This question, however, M. Valleix does not pretend to settle definitively. He merely says, that in the present state of our knowledge, the positions of M. Bossereau cannot be maintained. Indeed, further observation is needed on this very subject. In this country and in England, pain in the side, as an accompanying symptom of leucorrhœa and of uterine displacements, has been noticed. And at the same time, the undoubted prevalence of this dorso-intercostal neuralgia amongst the male sex, shows us that the circumstances under which the disease may arise are various.

Of the symptoms of the disease, the pain on pressure is considered by M. V. to be the most prominent. It was found in every case, more commonly over rather circumscribed points, and separated from each other in the course of the same nerve, by considerable intervals. Thus the first of these points was in the posterior part of the intercostal space, just outside of the spinous processes, and nearly opposite the hole between the vertebræ through which the nerve passes. This may be called the posterior or the vertebral point. A second point, about midway in the intercostal spaces, may be called the middle point, and then between the cartilages, there is a third point, the anterior or sternal point. These three points correspond with a more superficial distribution of the nerves. But, besides the pain on pressure, there was spontaneous pain, and of two kinds, the one a dull, permanent pain, the other lancinating. The frequency of these was always in proportion to the violence of the disease. These pains, however, were found to exist in only 15 of 23 cases, so that they cannot be considered a characteristic symptom. They sometimes seemed to commence from the vertebral column, and sometimes from the anterior part of the chest. In one patient they were felt in the three points above mentioned, at the same time. The dull, steady pain was found in all the cases, and at all periods of the disease, except in two instances, where, when the patients were perfectly still, their freedom from all pain was only interrupted by the shooting or lancinating pains. It was found in all the painful points, but not always in all at the same time, and more frequently posteriorly than elsewhere. To show how distinct and evident these painful points are, M. V. gives an account of a little girl nine years of age, who, on being asked where her pain was, put the end of her finger on those three very points; and on examination, the points which were in the eighth and ninth intercostal spaces, were very limited. In 29 pa-

tients there were neuralgic pains in other parts of the body. In nine cases, the pains were in the head, in six cases of the lower limbs, in six cases of the upper limbs, in eight of the loins and hypogastrium. We see, then, the truth of the observation of Nicod, that it is rare to find neuralgia confined to any one part. M. V. also finds that in the affection we are now considering, the pain of the back and side, as well as the accompanying pains in the head and limbs, were on the left side in a large proportion of cases. But he found also pains which were not neuralgic. Five patients complained of headache, which lasted a few days, and was accompanied by slight febrile symptoms and trouble of the digestive organs. Rheumatic pains were found in several cases. One patient had a torticollis, from which he recovered in four days without the use of remedies. Still, inasmuch as the accompanying pains were decidedly neuralgic in the greater number of instances, we must admit that there was in the economy a predisposition to this disease. M. V. did not find any lesion of the respiratory organs. In a few patients there was some trouble of the digestive organs, as loss of appetite, nausea, diarrhœa. But as these symptoms were not connected with any exacerbation of the disease, and as in fact there was no proportion between the two classes of symptoms, we cannot admit a disorder of the digestive organs to be a symptom of intercostal neuralgia. Nor, on a careful examination of all the cases with reference to the condition of the heart and the pulse, is there any reason to believe that the circulation is modified. Nor are chills, increased heat of the surface of the body, to be regarded as symptoms of the disease. In 12 of 20 cases, the menses were regular. In no case was there an abundant mucous discharge from the vagina. In two of three patients where the symptom was carefully sought, the neck of the womb was not painful on pressure.

The course of the disease was very irregular. In the greater number of patients the pain did not come on suddenly and severely. When the disease was fully developed, the exacerbations and intermissions of pain succeeded each other most irregularly. How far these were connected with meteorological changes, may to some extent be appreciated by consulting the two tables which we subjoin.

Number of observations.	Temperature.	Pain severe.	Pain slight.	Proportion of severe pain.
23	32°	15	8	$\frac{2}{3}$
55	from 33° to 57°	40	15	less than $\frac{4}{5}$
109	above 57°	63	46	less than $\frac{3}{5}$

Number of observations.	Weather.	Pain severe.	Pain slight.	Proportion of severe pain.
140	Rain	87	53	$\frac{4}{7}$
28	Fair	19	9	$\frac{2}{3}$
9	Snow	9	0	the whole.

We should infer, then, that atmospherical variations had an influence on the severity of the pain, and that the pain has constantly been more severe when it snowed. M. Valleix, however, cautions his readers not to expect to find in every case a connection between the state of the atmosphere and the severity of the pain. In his own cases, when the weather has scarcely changed at all for days together, increased and diminished pain, and freedom from it, have alternated frequently. We can only then look to atmospherical variations as one cause of the irregularity of the disease, and we must confess our ignorance of the principal cause. In no case has the disease disappeared suddenly. In all the patients, with but one exception, the convalescence was slow, gradual and irregular. A periodical intermittence was observed in only one case. The pains were more severe in the night than the day in only one case. The duration of the disease was from one to six months. In some cases it was very rebellious to treatment. Of 16 patients treated by M. Valleix, 12 recovered. Of the four others, two experienced no relief, two were partially relieved. M. Valleix has had the opportunity in two patients, who died of phthisis, and who had suffered from intercostal neuralgia, to examine the state of the nerves, and he found them not different in any respect from those of the other side.

In the diagnosis of the disease, there might be some difficulty. It could not well be confounded with pleurisy or with pneumonia. To distinguish it from rheumatic affections of the walls of the chest, might be difficult. Rheumatic pain of the side is extended over a larger space, and its extent is not so defined. The pain on pressure is generally less severe, and the small, well-defined painful points do not exist. The lancinating pains are less marked, nor do we ever find pain in two or three points separated from each other by a certain distance, as is the case in intercostal neuralgia. Rheumatic pain in the trapezius muscle is accompanied by an increased sensibility along the cervical ligament, as well as over the dorsal spinous processes. The superior attachments of the trapezius are painful on pressure, as well as its inferior attachment to the spine of the scapula. The pain is sufficiently marked also in the interval between

these points, and in the dorsal region the morbid sensibility does not exist to the outside of the spinous processes, but only over them. In all cases of rheumatism the pain is felt especially on motion, and more so on sudden motion, as when the patient, fatigued with one position, changes it. We have dwelt more on the distinct characters of intercostal neuralgia from rheumatism, as the diseases have for the most part been confounded by authors. Another interesting question raised by our author, is as to the connection between the disease we are now considering and angina pectoris. Undoubtedly this last name has been given to cases of intercostal neuralgia. Still, in none of the patients suffering with intercostal neuralgia who came under our author's observation, was there that anguish, that sense of impending suffocation which are put forward as the characteristic symptoms of angina pectoris. We may then conclude with our author, that in the present state of our knowledge, we cannot attribute such serious embarrassment of the circulation and of the respiration to a simple neuralgia. Pains darting from a limited point and surrounding the base of the thorax and the abdomen, are often found where there is a softening of the spinal marrow. M. Valleix relates two cases of softening of the spinal marrow and of intercostal neuralgia in the same subjects. Yet the distinctive characters of the latter disease were perfectly preserved. The affection described by some English and American writers as spinal irritation, is believed by our author to be identical with intercostal neuralgia. Still, as he finds peculiar features in some cases which have been reported under this last name, he looks to future researches for a definitive settlement of the question.

Lumbo-abdominal neuralgia is a disease of which we find very scanty accounts in any previous works. Coussoys, in a thesis published in 1812, relates a case, and Nicod has a little to say about it. There is a particular form of this neuralgia, which has attracted more attention. It was called ileo-scrotal by Chaussier, and that author considers it to be the same affection with that described by Sir Astley Cooper as irritable testicle. M. Valleix has not cases enough to furnish a complete history of the disease. From his general description we select the most interesting particulars. The seat of this affection is more frequently on the left than on the right side. The painful points are the lumbar point, just to the outside of the first lumbar vertebra, and in that part of the skin to which numerous nervous filaments are distributed; the iliac point just above the middle of the crest of the ilium; the hypogastric point, above the

inguinal ring and to the outside of the linea alba; an inguinal point near the middle of Poupart's ligament; a scrotal or labial point in the lower part of the testicle, or in the thickness of the labium. There are sometimes two painful points on pressure, and in some cases there are more. In all cases there is quite an interval between the painful points. The pains here are the same as in the other forms of neuralgia. Lumbago is the disease which may most easily be confounded with the one we are considering. But in that complaint the two sides are alike affected, and the pain is confined to the muscular mass of the sacro-lumbalis and longissimus dorsi. Pressure is but slightly painful, but all motions of bending or of straitening the trunk are extremely so.

Of crural neuralgia we know still less than of the form last considered. Our author reports three cases, which, and the remarks on them, are worthy an attentive perusal. Without dwelling upon it now, we pass to the seventh chapter, on femoro-popliteal neuralgia, or sciatica. In the works of Hippocrates we find an allusion to this disease, and the number of authors who have published on the subject in all subsequent time, has been very great. M. Valleix has found 125 observations for his analysis, 15 of which are original, and 21 have been communicated to him by M. Louis. All the observations, however, cannot be brought to aid in his investigations on all the points where information is desirable, as many of those found in various works are wanting in important details. In considering the symptoms, we may first ask as to the seat of the disease. In the 103 cases, there does not appear to have been the same preference for the left side as was noticed in other forms of neuralgia. The painful points are ascertained from the 36 cases collected by M. Louis and the author. In 10 of these, there was pain in the loins, and on both sides, in all cases, with but one exception. In only one case there was no painful point along the hip and thigh. The painful points in the other cases were four in number. One, near the posterior and superior spine of the ileum, was found in every case but one, and in 24 cases it existed from the very commencement of the disease. A second painful point was found near the middle of the crest of the ileum in eight cases. This point, smaller than the preceding, was from a half inch to two inches in width, and from half an inch to an inch in height. A third point was over the upper part of the sciatic notch, and pain in this point occurred in 16 cases. The fourth point was in the neighborhood of the great trochanter, where pain was ob-

served in 26 of the 36 cases. The painful points in the thigh were less distinct, the pain being felt in the whole extent of this region in all but four cases. In 17 cases, a pain more or less violent was felt through the knee, there being one or two points where the pain was particularly severe. These points were in the external parts of the ham, and over the head of the fibula. There were three principal painful points for the leg, along the fibula, over the calf and along the edge of the tibia. Thus, in 28 patients there was pain more or less severe along the posterior edge of the fibula. In 15 patients there was a distinct pain in the calf. The foot was painful in 25 cases, but in only three cases was the sole of the foot the seat of pain. All these points correspond to the passage of nervous filaments from deep-seated parts towards the skin. Pain on pressure was observed by M. Valleix in every case. This, however, was noticed by M. Louis in only 10 of the 21 patients who came under his observation. Of 60 cases published by M. Martinet, in only four was this symptom mentioned. Our author, however, is not disposed to attribute the constant presence of the pains in his own cases to mere chance. His own notes were much the fullest, and the symptom was present in those of the other cases which were taken with most minuteness and exactness. The points of spontaneous pain were not always those of pain on pressure. In 15 cases there was pain on pressure where there was no spontaneous pain, and in 13 cases there was spontaneous pain where there was no pain on pressure. The intensity of this last pain was very variable. In many cases the patient complained of severe suffering when the skin was but touched, whilst pain was produced on strong pressure only in other cases. In eight of 15 patients, complaint was made of pain in one of the points of pain above mentioned whenever the limb was moved, whilst the other seven could move their limbs extensively and in different directions without any pain. When this pain existed, it was in most cases a sensation of being bruised. In only three cases it was lancinating. Twenty-nine of 36 patients were confined to a recumbent posture on account of the pain produced by walking. The pain was not less on or after walking in any case. In six cases pain was felt in the hips on coughing or taking a long inspiration. In two cases this pain extended to the foot. Where the disease was violent, it was impossible to lie on the affected side. Four patients could not sit down without an increase of the pain. We see, then, how great was the effect of pres-

sure to produce pain. There was a constant exacerbation of the pain every night in only one case.

The spontaneous, dull, continuous pain was present in every case, and generally its violence was in proportion to that of the lancinating pains. These were observed in all the cases taken by M. V., but not at all periods of the disease. Thus they existed at the commencement of the affection in only four cases. Three of the 21 patients observed by M. Louis did not suffer from lancinating pain at any period of the disease. These pains seemed always to commence from one of the painful points, but their direction was different in different cases. Thus, of the 36 patients who came under the observation of Messrs. Louis and Valleix, in 16 these pains appeared to shoot from above downwards, in three patients their direction was from below upwards, as well as from above downwards. In eleven patients these pains seemed to be confined to one point. The frequency and the violence of these pains were always in proportion to the violence of the disease. In the greater number of cases, the pain was extended over the whole course of the sciatic nerve. In two cases, however, it was limited to the hip, and in two other cases to the ankle. Besides pains, several patients experienced different sensations in the affected limb. More frequently there was a sensation of cold, not constant, but experienced at different hours of the day, sometimes on getting into bed. Three patients, however, complained of a burning heat, one of itching of the limb, one of a chill confined to that part of the limb which had been the seat of the pain. Cramps were noticed in seven of the 36 cases, coming on always on getting into bed, and not occurring except in cases where the disease was severe, and at that period when it was most so. The violence and the variety of the pains were certainly greater in this than in any of the other forms of neuralgia, except it be in the trifacial. All the patients observed by M. V. complained of pains in other parts of the body. Thus, five pointed to the head as the seat of pain, six to the chest, and two to the loins and abdomen. Where the disease was of one side, the other pains were always felt on the same side. These different neuralgias always existed at the same time, and in no case did one appear to take the place of the other. On the contrary, they increased in intensity at the same time. Eleven patients complained of pain in the forehead, which did not seem to be of a neuralgic character, but was such as often occurs in febrile diseases. Rheumatic pains were noticed in three cases. Cotugno, in his work, has

dwelt much on atrophy of the affected limb. In one case where the disease was severe, M. V. was able to ascertain, by exact measurements taken at different times, that there was some emaciation of the leg. In three patients observed by M. Louis, who suffered from intense pain during three weeks, four months and fifteen months, the leg appeared to the eye to have emaciated. Our author has not found any symptoms from the respiratory or from the digestive organs in the cases which he has analyzed. He has found the state of the pulse to vary rather with the treatment, than with the exacerbations or remissions of the disease. The frequency of the pulse was the same when the degrees of pain varied very much, and in no case was there any irregularity. Chills, heat, or sweats, were noticed in 13 of the 36 cases. In some of the patients they might be attributed to the remedies which were employed. It results from the observation and examination of M. V. that sciatica rarely appears under an intermittent form.

The course of sciatica is as irregular as that of the other forms of neuralgia. In 11 of 27 patients, the disease came on rapidly. The attack was sudden in only one case. It extended gradually, and the increase in the severity of the disease was very gradual also. The causes of the exacerbations and remissions are very obscure. Our author submits in tabular forms the results of his observations as to the effect of atmospherical variations, the influence of which would seem to be less than in intercostal neuralgia. The disease did not disappear suddenly in any case, but convalescence was always more or less slow and gradual. The duration of the disease cannot well be determined. No fatal case has ever been reported. Of 107 patients, 78 recovered, and 12 were partially relieved. Of 36 patients, six suffered from relapses. In three other cases slight returns of the pain were noted. M. V. has not had an opportunity of inspection of the nerve in any case. He examines most carefully all such cases which have been reported, and he does not find that in the present state of our knowledge we can connect the disease with any lesion.

Causes.—The disease would appear to be equally frequent at all periods of adult age. Of 124 patients, three fifths were males. Relapses appear to be much more frequent in individuals of this sex also. In 41 of 59 patients, the constitution was ¹²²strong and robust; it was decidedly bad and feeble in only two. Fourteen of 55 patients had a nervous temperament, and nine of these were females. Of 27 patients, nearly one half lived in a damp and badly ven-

tilated dwelling. There is no evidence that insufficient or bad food is a cause of the disease. Of 36 patients, only two used freely alcoholic drinks, nor is there any evidence to support the opinion that venereal indulgences predispose to the disease. In five cases the parents had suffered from severe pains, 11 of 21 females complained of disordered menstruation, and in eight of 14 cases there was an abundant leucorrhœa. In four cases there was some disease of the spinal marrow, in no case did the disease appear to be connected with the disappearance of a cutaneous eruption. In only one case was there any reason to attribute the disease to external violence. In the cases examined by our author, he does not find that the disease can be attributed to the influence of syphilitic virus. Of the 36 cases observed by Messrs. Louis and Valleix, there were five where the disease followed an exposure to cold. Of 13 other cases, in 10 cold appeared to be an efficient cause. M. V. very properly regards the assertions of the authors who have reported cases, or who have written on the disease as to the etiology, as entitled to comparatively little weight, inasmuch as the greater part of them have been contented with a most hasty and superficial interrogatory as to this point.

The diagnosis of the disease may present some difficulty under certain circumstances. It is generally very easy to distinguish it from articular rheumatism. Our author relates a case where the two diseases pursued their course in the same individual at the same time. And in this very case each disease was marked by its own characteristic symptoms. A case of coxalgia, which, when first seen, was mistaken for sciatica, is related by our author. Still, in this case the mistake might have been avoided by a careful examination of the parts affected. A case of nevritis coming on after instrumental and tedious labor, is also given. Here there were intermittent lancinating pains, extending through the whole limb, but with these symptoms there existed a partial and sudden paralysis without emaciation. There were also febrile symptoms, which evidently would not have been occasioned by the treatment.

The subject of neuralgia in general is brought before us by our author in the eighth and last chapter. A general history of the disease has often been attempted before. M. V., however, proposes to himself a task which had not been accomplished. The former histories have been too much accounts of opinions and theories. Many statements of facts, from want of evidence, and of care in observation, are

not to be depended upon. Some forms of neuralgia have escaped notice, or have been imperfectly described, till very recently. M. V. collects together the results obtained from the study of each particular form of neuralgia, and thus gives us the general features of the disease, at the same time showing us how far and how much we have progressed towards a knowledge of its laws, and also, what doubtful points are yet to be made clear by further observation. We would commend this chapter to the special notice of the reader. As the facts on which the results are based have been passed in review by us, and as this article is already sufficiently long, we must hasten to what we have omitted till now, the treatment of the disease. Beginning with external applications, our author first asks how far are blisters efficacious? On this subject M. V. has published a memoir in the "*Archives Générales de Medecine*," for March, 1842, and as this contains also the results of observation subsequent to the publication of the book, we shall take the results from it in preference. Flying blisters were applied to the seat of the pain in 49 cases. More than half of the patients were more than 60 years of age, and in most of them the enfeebling effects of previous disease were present, so that there was no selection of cases such as would be most easily influenced by treatment. The disease had existed for some time in all the cases, from three days to six months or even to years, and in all the cases it was marked by a certain degree of severity. In 23 of the cases, the neuralgia was intercostal, in about two fifths of the cases it was of the head and the arm, in the remainder of the loins and legs. In one third of the cases, one blister applied to the most painful point was sufficient, in one quarter two were necessary, and in the other cases from three to nine were employed. The number of blisters was in proportion to the intensity of the pain, and not to the form of the disease or to its previous duration. In two thirds of the cases a remarkable diminution of the pain was noticed within twenty-four hours after the application of the blister. In one seventh of the cases the amelioration took place after the lapse of three or four days. In half of the cases the treatment was continued during from two to six days, in two fifths of the cases the treatment was persevered in for nine days, and in two cases for twenty days. Three of these patients were only relieved, the others recovered entirely. The results certainly are remarkable. The good effects of the remedy in every case, the complete recovery in fifteen sixteenths of all the cases, the short time in which the patients were

under treatment, these are points that may well attract our attention, and which must make the book before us valuable in the eyes even of those who ask only for what is immediately useful and practical.

The application of one of the salts of morphia to the blistered surface has been much in vogue in France in the treatment of the neuralgias, and M. V. acknowledges its utility where the pain is very great. At the same time, as he has found blisters so efficacious to remove the disease, he questions whether the good effect attributed to the morphia by those who have published cases on the subject, ought not rather to be ascribed to the blisters. Cauterization, incision, section of the nerve, are considered by our author as unnecessarily severe remedies. Electricity is not entitled to the confidence reposed in it by M. Magendie. In the cases which have come under the observation of our author, he has found little occasion for the use of internal remedies. He has known of no case where narcotics effected a radical cure. In patients who suffer from periodical attacks, the sulphate of quinine may be administered. In 18 such cases, six patients recovered, and two were relieved. M. Valleix examines with great care 11 cases of trifacial neuralgia, in which the subcarbonate of iron was administered, but the advantage derived from it appears to him to be very problematical; at any rate, the good effect from it takes place only after the lapse of several days treatment, and in some cases it occasions a good deal of disorder of the digestive functions. The pills of Meglin (composed of equal parts of extract of henbane, valerian and oxide of zinc), have been employed chiefly in trifacial neuralgia, but our author, from the small number of cases of treatment by these pills at his disposal, cannot decide positively as to the efficaciousness of this remedy. At the same time he would accord to it a certain value. The oil of turpentine is a favorite remedy of many in sciatica. Our author examines carefully the cases reported by Martinet, where this drug was administered. Four patients who took this medicine, have been observed by M. V., and adding these to the other cases, he has 57 patients, of whom 35 recovered. Yet the histories of these patients are not recorded in such a manner as to authorize us to conclude that five eighths of those who undergo this treatment recover, nor even to appreciate exactly its influence. It can only be said that the remedy deserves further experiment.

At the commencement of this article we expressed our opinion of M. Valleix's book, and we have endeavored to present such an analysis of the contents as would enable the reader to judge of the matter for himself. It must be considered the standard work on the subject of neuralgia, and at the same time, in the fidelity, exactness and minuteness of the researches, in the careful and rigorous analysis of the materials, it may serve as a model for future undertakings.

Bibliographical Notices.

I.—*The Principles and Practice of Modern Surgery.* By ROBERT DRUITT. From the second London Edition. Illustrated with fifty wood Engravings, with Notes and Comments by JOSHUA B. FLINT, M.D., Lecturer on Therapeutic and Operative Surgery in the “Louisville Academy of Medicine,” &c. Philadelphia. Lea & Blanchard. 1842. Pp. 534.

WE would earnestly call the attention of students, and all engaged in their instruction, to the present work. The arrangement is very good and the views sound. The book is divided into five parts, the first two treating of the principles, and the other three of the practice, of surgery. The author in his preface laments that his limits would not permit a more complete elucidation of the subjects to which his first two parts are devoted; this is a matter of great regret. Every one engaged in the arduous task of teaching, must feel the want of some text book to which he may refer the student for a knowledge of the pathology of surgical disease, such as is furnished by works on the sister art of medicine. The pathology of surgical disease has of late years received immense elucidation, but principally by separate articles scattered through journals and reviews, or delivered from the chairs of professors; so that nowhere can the student avail himself of this flood of light. The pathology of scrofula, connected, as it is so clearly shown by Lugol and others, with tubercle; the diseases of the bones, which are all generally classed by surgeons and surgical writers under the two great and obscure heads of caries and necrosis, but which have lately been elucidated by Nela-ton and others, explaining the interesting connection of these two states in many instances with tubercular disease, are a stumbling block in the path of every medical student. Surgical science has too long been considered as consisting only in the dressing of wounds, the healing of fractures, and the amputating of limbs. The surgeon should have as correct a knowledge of the progress of tubercle when it appears in the bones composing the knee joint or the testicle, as the physician has, who watches the same disease in the lungs. We do not make these observations as applicable to the book before us,

or its author. Mr. Druitt touches upon all the points by which modern pathological surgery has been enriched, and shows himself to be fully equal to the successful performance of the task we have hinted at. We only regret he has not felt the importance of undertaking it. The American Editor has conferred a great favor by introducing this work, and, as he says in his preface, a course of lectures or instruction built upon this would fulfil all the requisites for a surgical education. In a foot note by Dr. Flint, we notice the use of the French term "*engorgement*," as if a regular English word. Against such innovations we must protest; the more so, that they are by no means uncommon. Can Johnson or Walker supply nothing equivalent? What idea could this possibly convey to an unfrenchified Anglo-Saxon? The typographical execution is worthy of all praise, being the best cheaply printed medical work we remember to have seen.

II.—*Elements of Surgery*. By ROBERT LISTON, Surgeon to the North London Hospital, &c. From the second London Edition, with copious Notes and Additions by SAMUEL D. GROSS, M.D., Professor of Surgery in the Louisville Medical Institute, with Engravings. Pp. 636. Philadelphia. Barrington & Haswell. 1842.

It is a favorable index of the zeal for the acquirement of medical science at the West, that two such excellent works as this and the one last noticed, have been issued under the care of two lecturers in what we may fairly suppose to be rival schools. Mr. Liston is well known as being ambitious of the reputation of an originator in surgery; he certainly is a most dextrous and judicious operator. The work before us is full of most useful hints, but we cannot but think that he would create for himself a more lasting reputation if he would confine his writing to the elucidation of some particular branch in surgery, and give us the views acquired by a long and extended practice.

Text books are the province rather of the younger class of writers, acquiring their knowledge from books and an observance of others' practice. The student should be first indoctrinated with the grand principles of the art, and he may then examine the views of particu-

lar individuals. We have made these remarks, considering the work as a guide for students, and as an expression of our wish that Mr. Liston may devote his attention to some work of a higher order. The notes of Dr. Gross, already so favorably known as the author of a work on Pathological Anatomy, cannot fail of being read with interest, and we find among them a large amount of information.

III.—*Regimen and Longevity—comprising Materia Alimentaria, National Dietetic Usages, and the Influence of Civilization on Health and the Duration of Life.* By JOHN BELL, M.D. Philadelphia.

WHEN a great excitement is prevailing with regard to any subject, any one who interests himself in it and attempts to investigate it, will elicit more or less that is new, and more or less that is of value. For a long time the public mind has been constantly occupied with the efforts at reform in regimen, more especially in regard to temperance in the use of spirits. While a moral reform has been the great end held out, much valuable information has been gained to science by the indefatigable labors of its zealots, who have hesitated to push their inquiries into no branch of science where any thing was to be gathered for their cause, and with an earnestness which has occasionally outstripped the more patient and cautious step of the scientific inquirer. As they have another object in view, and their aids to science are merely incidental, their acquisitions are to be received with a degree of hesitation, and not without caution.

The above work, most of which is of rather a popular character, and makes little pretension to science, contains within a small compass a vast amount of curious and interesting information with regard to the nature and history of the different articles of food and drink in common use, and with regard to the dietetic habits of different nations and different ages. The author is fully engaged in the temperance interest, but deals fairly with that part of his subject which embraces stimulating drinks. His materials he has well analyzed and thrown together in a simple and clear style, so as to render them most useful as well as agreeable to the general reader.

Such books do much to correct popular prejudice, and to give

people more just views and accurate knowledge of the nature and operation of the numerous articles of food and drink which they are habitually using, either to supply the demands of nature or for the pleasures of sensual indulgence. Where the subject is honestly dealt with, for the sake of giving information, and not for the illustration of some peculiar view or theory of its author, more may be done to reform the habits of society, by a simple statement, like this, of facts, than by attempting to drive people from long-established usages to which they have become attached, and which they think important to their comfort and well-being, by intemperate argument. We would recommend this book as unexceptionable, and well calculated to accomplish the purpose of its author.

IV.—*The History, Pathology and Treatment of Puerperal Fever and Crural Phlebitis.* By Drs. GORDON, HEY, ARMSTRONG and LEE. Republished in Dr. BELL's Medical Library.

WE are pleased to see the republication in Dr. Bell's Medical Library, of these valuable monographs upon puerperal fever. As they are all of them essays founded upon an extensive observation, and contain a very large number of recorded cases, they must always be valuable. They are moreover of special value, as containing the history of extensive epidemics of this most appalling disease.

We are too much in the habit, in medicine, as soon as a new and more elaborate treatise upon a subject appears, to drop the old; and we lose in this way very much that is of real and practical importance. This is particularly the case with regard to therapeutics. And every one who has been in the habit of referring to some of the older writers, well knows how many practical hints are to be gathered from them. So rapid has been the progress, of late, of physiology and pathology, that but a few years throws a writer into antiquity, and as all that is established will almost necessarily be incorporated into more recent works, reference to the old is comparatively of less importance. But it is less so with regard to therapeutics and the history of disease, and we are glad to see Dr. Bell republishing some of the older practical writers, together with the new. It is especially interesting where, as in the present instance, works upon the same subject, of different dates, are published together.

V.—*Essays on the Philosophy of Vitality, and on the Operation of Remedial Agents.* By MARTYN PAINE, A.M. M.D. New York, 1842.

WE have received a couple of essays from the ever active pen of Dr. Paine, upon the philosophy of vitality as contradistinguished from chemical and mechanical philosophy, and upon the action of remedial agents. They both exhibit the extensive reading and inquiring mind of the author. We are sorry to see in his preface that he does not appear to be disposed to let the difficulty which he has had with the *British and Foreign Quarterly* rest. It shows a want of a generous and liberal spirit, continually to harp upon such an affair, when every explanation which could be expected or asked for has been given.

Scientific Intelligence.

EXTRACTS FROM THE REPORTS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

MAY 9, 1842. *Monstrosity*.—Dr. J. B. S. Jackson reported the dissection of a monstrosity (acephalus, St. Hilaire), brought from Salem by Mr. Peirson. It occurred in the practice of Dr. Johnson. The mother was a mechanic's wife, who had previously had two well-formed children. Nothing remarkable in pregnancy, except her great size; labor took place at the sixth month, and was easy. There were twins, as is usual in such cases, and the monster was born first, which, according to St. Hilaire, almost never happens. It came head first, without the liquor amnii, and without being enveloped in the membranes. With the second child there was a large quantity of liquor amnii; it was quite small, and died in 12 hours. Placenta single; cord of the monstrosity about six inches in length, and inserted near the edge.

Externally the monstrosity resembled very nearly one which was presented to the Society a few years since by Dr. Boylston, described by Dr. J. and figured in the *American Journal of Medical Sciences*, February, 1838. The weight was 4 pounds 13 ounces; length 11 inches, and width at upper part 6 inches. Excessive œdema constituted the greater bulk, and seems to be constant in these cases, and yet Dr. J. did not find that St. Hilaire had noticed it. There were no cysts in the integuments, as in Dr. B.'s case. Lower extremities sufficiently large; feet turned in, and the toes imperfect. There was some vestige of the right hand, but only a pit in the place of the left. A small, soft, fleshy protuberance, as usual in these cases, represented the head, and around it was some appearance of hair. Immediately below this protuberance was a very remarkable organ, which from its structure Dr. J. regarded as pia mater; it was a regular, circular, flattened soft mass, 16 lines in diameter, and about three lines thick, the base being only about two thirds of an inch; the color dark red, the integuments not being continued over it; surface apparently serous, and being cut into in every direction, the structure seemed uniform, not very unlike the corpus spongiosum in structure, and altogether resembling the tissue found on the base of the skull in what are commonly called acephalous fœtuses, and which Dr. J. supposed to be pia mater. There was nothing beneath it for a base, but the cellular tissue which filled the

thorax, and there was no trace of a brain. Dr. J. had met with no notice of any thing of this kind, except by Béclard (art. *Monstruosité*, Dict. des Sc. Med.), who found a little red tubercle in front of the chest, attached to a small hollow bone fixed in the sternum; the bone was probably a rudimentary cranial bone, connected only with the sternum by cellular tissue.

On dissection, there was found no trace of heart, lungs, thymus gland, liver, spleen, pancreas or diaphragm. The umbilical vein was pretty fully injected, and as some vessels were filled which were not larger than a common thread, we may infer the absence of valves. St. Hilaire says (Hist. des Anom. vol. ii. p. 518) he knows but one fact as to their existence or absence, and then there was no trace of them. It sent branches to the lower extremities and abdomen, and then a trunk which divided for the head and upper extremities. One quite large vessel entered the spinal canal on the right side in the lumbar region, and as there was no azygos vein, this probably took its place. The injected vessels were shown dissected out and prepared for the Cabinet. There were two umbilical arteries, which Dr. J. failed to inject further than the bladder, the structure showing readily which were arteries and which were veins. On the right side the artery did not go to the aorta, but directly to the lower extremity; superiorly the trunk divided like the vein. The mode of circulation is a very interesting question. Blandin (art. *Acéphalie*, Dict. de Med.) says that it is effected by the vessels alone, as in the early fœtal condition, and so it seems to be generally thought. He and St. Hilaire both speak of anastomoses or communication between the arteries and veins; in Dr. Boylston's case, Dr. J. thought it clear from inflation of the vessels that there was none, and in the present case it is pretty certain that there was no considerable anastomosis, as the injecting matter did not pass. St. Hilaire says the placenta is generally single in these cases. It was so here, and when it is so, Dr. J. thought the circulation might be carried on by the heart of the other fœtus. As to the course of the circulation, it has been thought that the blood entered by the arteries and returned by the veins, and this would probably be the case if it was impelled by the heart of the other fœtus; the idea may have arisen from the belief that there were valves in the veins, but the existence of these, so far, seems to be disproved. The œdema of the integuments has been explained by retarded circulation, and this we may well imagine, if the blood is to be returned by veins unprovided with valves.

The large intestine was 10 in. in length; small intestine 15 inches, and ending in a cul de sac; two considerable dilatations of the lower part of ileum, from one of which arose a marked diverticulum; anus open. There was a considerable quantity of nearly colorless mucus, with some white, curdy flakes, and in the small intestine some traces of a greenish color. Mr. Stanley last year reported to the Medico-Chirurgical Society, the case of

an acephalous lamb in which the liver was wanting, and yet there was an appearance of bile in the intestine. The renal capsules were small, and united across the spine like a horse-shoe kidney. Left kidney large, 13 by 16 lines, and seemed to be distended with urine; right kidney five by nine lines; ureters well. The bladder was rather small, but contained urine. The testicles, gubernacula, vasa deferentia, prostate, verumontanum and penis sufficiently well. The glans penis was adherent to the prepuce, as Dr. J. believes it almost always is in the fœtus. The ganglia of the sympathetic nerve and the filaments connecting them were quite distinct in the thorax, abdomen and pelvis. In the thorax were two well-made ganglia, greatly developed; extended from the upper rib to about the eighth rib on the right side, and the sixth on the left, filaments going from them to the intercostal nerves. The spinal marrow was sufficiently developed, as were the intercostal nerves, and the nerves in the lower extremities. The right brachial nerve was rather large, and, what was one of the most remarkable points in the whole anatomy, although there was no trace on the left side either of clavicle or upper extremity, not even in the cartilaginous state, yet there was a very tolerably developed nerve, artery and vein running down in connection, in the situation and direction which the extremity would have taken if it had existed.

Skeleton.—There were 11 ribs on the left side and 12 on the right, all well formed except the three first on the right side, which were fused anteriorly. Dorsal vertebræ corresponded to the ribs, the fourth being incomplete on the left side. Cervical vertebræ about three in number, but not exactly determined; the wings were fused, but the transverse processes were tolerably distinct. Ten vertebræ below the dorsal, of which five may be regarded as lumbar, and five as sacral. Below these last was a hard, thick, blunt cartilage, in place of a coccyx. The sternum was in two lateral portions, widely separated, sufficiently and about equally developed. The right upper extremity was about three in. long; one metacarpal bone, with its phalanges well developed and ossified, and above these two irregular cartilages. There was no clavicle, and, as above stated, no trace of a left upper extremity. Pelvis well formed. Lower extremities sufficiently developed, strongly rotated inwards, and the feet turned in as in varus; head of each femur quite prominent anteriorly, as if partially dislocated, and the synovial membrane seemed universally adherent. On the left foot there were four toes distinct; fourth metatarsal bone cartilaginous and quite slender; six tarsal, the third cuneiform being wanting. On the right foot, on which there were three toes, there were two metatarsal bones well developed, and two very imperfect and cartilaginous; tarsal as on the left side.

MAY 9, 1842. *Malignant Disease of the Uterus.*—Dr. Bigelow reported the following case, which occurred in a lady 53 or 54 years of age. Dr. B.

saw her first a year ago last June. A year or more previous to this, she had discovered a tumor in her right hypogastrium, extending up, and at length occupying the whole lower part of the abdomen. As felt externally it appeared to be about five or six inches in diameter. It was attended by no pain, but at times by a slight tenderness on pressure. One of its most uncomfortable symptoms was a very fœtid discharge from the vagina. On examination by the vagina, the os uteri was felt closed, hard and corrugated; the neck nearly obliterated. Through the rectum the same tumor was observed more distinctly, extending abruptly back, occupying the whole lower curvature of the spine. It went on increasing for some months, giving much discomfort from the discharge, and bearing-down pains which at times attended it. At one of his examinations, Dr. Bigelow found the os uteri open, and a soft insensible substance protruding. Some portion of it he was able to get away, and found to consist of a cerebri-form substance, with some coagulated blood. At subsequent examinations he found the os uteri more dilated, and was able to remove still more. The operation was accompanied by some hemorrhage, but no pain. It appearing to be not a tumor of the uterus, but something contained within it, he determined to try the effect of ergot in expelling it. He accordingly prescribed 15 grains every half hour. He had scarce reached home when he was called back, and on returning found the patient in extreme, unremitting bearing-down pains, like those which usually follow the exhibition of ergot. They were so intense that he was obliged to give laudanum freely to check them. Immediately after, upon examination, he found and removed from the vagina a large mass of cerebri-form substance amounting to between one and two pints. Considerable hemorrhage followed, but the patient was much relieved as to the size of the tumor and the other symptoms. Previously the tumor had been so large as to press upon the rectum, and obstruct the passage of its contents, so that even cathartics and enemata could with difficulty be made to operate. This mass was removed in April. She continued to be very much improved in health, though annoyed by the fœtid discharge. In the latter part of August, a more satisfactory examination was made, and the tumor was found to be connected with the inside of the uterus by a large pedicle. Thinking it might now be removed by ligature, Dr. Bigelow carried to the house the apparatus for the purpose. But in pulling down the tumor, while endeavoring to apply the ligature, the whole broke off and left only a stem behind. The hemorrhage was considerable, but not greater than in some of the previous operations. The symptoms almost immediately ceased. The discharge in a great measure ceased, and the tumor nearly disappeared. Her general health greatly improved. She continued well through the early part of the winter, but towards the close the abdomen began again to enlarge, and the discharge returned. The tumor gradually

rose till it reached the umbilicus; sometimes quite tender, but never very painful. From time to time portions were detached and removed. Her health continued to decline. Anorexia, nausea and vomiting occurred, under which she sunk, became delirious, and died in 24 hours. At the autopsy the uterus was found much enlarged, being 7 inches in length, and 5 in width, and almost universally adherent to the neighboring parts, viz. the cæcum, small intestines, rectum and bladder. On cutting it open, the parietes were found from one and a half to two inches thick. The cavity was enlarged, somewhat ragged, dark colored, and contained a black secretion of a fœtid and gangrenous odor. The cavity was continued into the right Fallopian tube, which was so dilated that it would admit the little finger. There was a perforation at the fundus of the uterus, which was only prevented from penetrating the peritoneal cavity by the adhesions of the intestines. The portion of the tumor which remained was composed of the same cerebriform substance which had been removed.

MAY 9, 1842. *Cancer of the Œsophagus opening into the Right Lung.*

—Dr. J. B. S. Jackson reported the following case. Mrs. S., aged 53, a patient of Dr. E. G. Davenport, had had a difficulty of deglutition for at least 8 or 10 years; food often regurgitated, but she suffered no pain. This symptom continued to increase, and for the last 6 or 8 months had been very much worse; during this time she had regurgitated almost always more or less after taking solid food, and this occurred as soon as the food seemed to reach the stomach, but without nausea. If regurgitation did not take place, she had much distress at about the spot where the disease was afterwards found. Her appetite was rather craving, and her bowels regular. In her general appearance she was quite thin, and her skin inclined to be yellow. Some months ago, she had, for about a fortnight, very severe pain through the middle of the lower part of the chest, but never at any other time. Five weeks since she had hemorrhage from the bowels, coming on occasionally for four or five days, but not losing much blood at a time, except once, when the quantity amounted to about one and a half pints. About a week before her death, which occurred on the 5th, she was attacked with acute pulmonary symptoms, viz. cough, dyspnœa, with severe pain in the right side, and fever, but she did not keep her bed till the last two days. She swallowed more easily the last two or three weeks of her life than she had done for some time before.

Autopsy.—The disease in the œsophagus commenced two and a half inches from the cardia, extending upwards anteriorly one and three quarter inches, and posteriorly two and a half inches. The canal was as large at this part as elsewhere, the size not being remarkable either above or below. The diseased surface was ulcerated, and had a whitish, soft, ragged and very unhealthy aspect, most nearly resembling an encephaloid affec-

tion. The cut edge presented no trace of the original structures, the disease being perfectly defined, except on the mucous surface, which was rather less so. Through the centre of the ulcerated surface, on the anterior face of the œsophagus, there was a perforation through into the substance of the right lung, which was gangrenous at this part; this was first made evident by inflating the œsophagus, and afterwards by the passage of a probe. The descending aorta adhered to the diseased portion of the œsophagus, and had upon its external surface near this point, a morbid and apparently malignant deposit; this was interesting as tending to confirm Dr. J.'s opinion as to the nature of the disease in the œsophagus, nothing of the kind being found in any of the other organs. The right pleura was acutely inflamed, and contained about 3xxij. of serum, not remarkable either for color or odor. At the posterior inferior part of the lung on this side, there was a patch of gangrene perfectly circumscribed, being about three inches in extent on the surface. On raising the lung, the pleura at this part ruptured, and there escaped a quantity of dark, thick fluid, which had strongly an odor as if from the stomach. The substance of the lung was partly of a dark brown color, soft and shreddy, but without any gangrenous odor, this being perhaps corrected by the secretions from the stomach.

MAY 23, 1842. *Enlarged Prostate.*—Dr. John C. Warren exhibited a specimen of enlarged prostate, of the same class, he said, with several which he exhibited to the Society some time since, and which were of much practical importance. The present specimen was taken from a gentleman 84 years of age. He had for many years had some slight obstruction in his urine. About four months since he had a more serious difficulty, which, however, was relieved. Finally he had another, when he was attended by Dr. Homans, who at first relieved him, but on the third day failed to introduce the catheter. Dr. Hayward was called in, who succeeded in drawing off his water. The day after, however, he failed, and Dr. Warren saw him. He succeeded in introducing the catheter, but drew off no water. On examination by the rectum, the parts were found very loose, and the pelvis filled with this mass of the prostate gland. He decided to let him alone, concluding that the difficulty arose from an enlargement of the middle lobe of the prostate, closing over the orifice of the urethra like a valve, and preventing the catheter from reaching the urine. On the second day after, the bladder had extended up to two fingers' breadth above the umbilicus. The bladder was punctured above the pubis, and the urine passed off very well. The second night after, the canula, by accident, was pulled out; but it was introduced again. For several days after, the patient did perfectly well, exhibiting no symptoms indicative of any but a favorable termination. Finally, however, owing to his advanced age and circumstances connected with his previous disease, he gradually

sunk and died, a result which must be considered as entirely unconnected with the puncture of the bladder.

The difficulty in passing the catheter in this case, was not owing to want of room, but to the enlargement of the third lobe of the prostate, occasioning an irregularity in the course of the urethra. It is very rare that any difficulty of this kind arises from enlargement of the lateral lobes. Dr. Warren had made many dissections of the prostate gland, and often from its minuteness was unable to discover the middle lobe, and when so large as to be discovered, it was rarely more than twice the size of a pea.

MAY 30, 1842. *Catheter broken off in the Bladder, and Calculus formed upon it.*—The specimen was sent to the Society by Dr. Henry Tuck, of Barnstable, Massachusetts, together with the following history of the case.

Dea. A. C., æt. 83 years, Yarmouth, a mariner in early part of life, and farmer during the last 40 years, always enjoyed vigorous and uninterrupted good health until the beginning of 1841, when he began to experience some little difficulty in voiding his urine. He had to make considerable effort at times to relieve himself, especially when fatigued. On the 19th of May, 1841, there was retention of urine for 24 hours, accompanied by great pain and tumefaction in the hypogastric region. A small-sized catheter was introduced into the bladder by Dr. Oliver Ford, of this town, the attending physician, and a large quantity of water drawn off, giving immediate and complete relief. Cathartics, diuretics, tinct. of cantharides, &c. were given. Still the inability to expel voluntarily his urine continued, and the same catheter which had been long in use was passed, occasionally meeting some little obstruction from the prostate gland, for 10 days, when on applying unusual force to introduce the instrument, something was perceived by the operator to give way. On withdrawing the catheter, it was found broken off at the bend, leaving the end in the urethra or bladder. A larger instrument was then passed without difficulty, and with it the piece of the broken one was distinctly felt in the bladder. Subsequent to this accident he continued his medicines, had the catheter passed twice a day for a month, and then the bladder recovered its tone, and he was able to void his urine by his own efforts. He gradually regained his health and strength, and was able to do light work on his farm until the 9th of December following, when he was seized with rigors, heat, nausea, vomiting, pain in bowels, accompanied by constipation and partial retention of urine. This ceased, however, after the application of hot fomentations. During the interval between these two attacks he was obliged to micturate more frequently than usual, and his water deposited, on remaining in the vessel, a thick, white, slimy sediment, which was adherent, and would rope when poured out.

On the return of his illness the second and last time, his strength was

completely prostrated—there was considerable irritative fever. His water was passed involuntarily in bed. He had one or two dejections daily without cathartics. Morphine was administered to allay the pain. His mind continued unimpaired until the 7th of January, 1842, when he died.

Post-mortem.—On opening the abdomen, no lymph or adhesions were observed. There was a small blue spot on the surface of the bladder, on the left side, about the size of a half dime, through which the catheter perforated on taking hold of the bladder to feel for the broken instrument, and projected three fourths of an inch. On laying open the bladder, the coats were found thickened. The mucous membrane was sacculated, rough, and altogether quite morbid in its appearance. In the posterior part was a calculus formed round the middle of the catheter, both together weighing two and a half drachms. The piece of instrument, to which the calculus adhered firmly, was three and a half inches in length. The calculus was of a reddish-brown color, extremely porous and friable. The prostate gland was about three times its natural size, and indurated.

JULY 11, 1842. *Shot in the Appendix Cæci.*—Dr. C. C. Holmes, of Dorchester, sent to the Society an appendix cæci, containing 122 shot, of about the size of robin shot, taken from a gentleman aged 88 years, who recently died of hydrothorax, and who had suffered for a long time from disease of the prostate gland. He never had any symptoms which indicated disease of this organ, and the disease of which he died was entirely disconnected with it. There was nothing remarkable in the appearance of the appendix itself, except its unusual length. There were no adhesions around it. The gentleman had been notorious for his fondness for game, and the probability is that he swallowed the shot in birds.

JULY 25, 1842. *Enormous Aneurism of the Aorta.*—Dr. J. Mason Warren was first called to the patient, who was a gentleman 43 years old, two years since, afflicted with severe neuralgic pains in the left hypochondriac region, and extending in different directions to the bladder, kidneys, and also downwards to the integuments of the left thigh, where the pain was of an almost insupportable character. At this time no tumor could be discovered in the abdomen. The suffering, in spite of all remedies, became so severe, that the patient, in order to get any relief, was obliged to place himself on his hands and knees, and thus situated, with the head downwards, he was able to get some rest in the course of the 24 hours. This position was maintained for the greater portion of the time during six weeks. At the end of that period the patient was seized with a violent hemorrhage from the nose, which was only checked at the end of 24 hours by plugging the nostrils. Subsequent to the hemorrhage the pains became somewhat relieved, and he was able to resume the recumbent position. An

examination of the abdomen being now possible, a pulsating tumor could be discovered in the left hypochondriac region—having on its front part what appeared to be the kidney.

From that period to the present, the tumor has gradually increased in size, extending in either direction—upwards towards the thorax, and downwards towards the thigh. The pulsations were commonly sufficiently great to shake the whole body, and were much increased before an occurrence of hemorrhage from the nose, which for the last two years has occurred at pretty regular intervals of two or three months, and was always checked with great difficulty—but was attended with relief to the system. The digestive functions during this period have been pretty regularly performed. His food, however, he was obliged to take while in the recumbent posture, as otherwise the tumor seemed to press on the stomach and destroy the appetite. As the tumor encroached on the thigh, the limb gradually became more and more flexed, until it was drawn up so as to form a right angle with the body.

About 14 days since he was again seized with a return of hemorrhage from the nose, which though checked from time to time, again returned so as to gradually exhaust the patient. The nostrils were plugged both before and behind; the blood, however, was in such a fluid state that it still continued to find an exit through the puncta lachrymalia.

The patient retained his faculties perfectly to the last, and through the whole of this long and trying period bore his sufferings with the most heroic fortitude.

The treatment has consisted principally in small bleedings, when the system from time to time became plethoric, and intimations were given of a recurrence of hemorrhage. By these means the epistaxis was occasionally warded off. The patient himself was always well aware when this became necessary.

The following appearances were presented at the post-mortem examination. On turning back the abdominal parietes, all the organs of the left side were found to be raised up on the surface of an enormous tumor. The left kidney occupied the epigastric region, and was the most prominent organ.

The tumor had pushed up the diaphragm, so as to be, at its apex, on a level with the fourth or fifth rib—below it had passed down underneath the crural arch and on the surface of the psoas and iliac muscles, and descended nearly to the middle of the thigh. On removal from its situation, it was found to commence in the abdominal aorta, opposite to the origin of the cœliac. The superior parietes of the artery appeared intact—below, at the point of origin of the tumor, they were deficient for the space of two inches.

The parietes of the tumor were formed below by the ribs, the muscles and

integuments of the posterior part of the abdomen ; above, the usual appearance presented by an aneurismal sac. The bodies of the lower dorsal and three superior lumbar vertebræ were nearly destroyed—also a portion of the body and crista of the os ilii of that side. One large coagulum appeared in the sac. The blood was in a very watery state, so that nearly all which remained in the body seemed to escape at the first incisions. The tumor was 19 inches in length, and 18 in circumference—being, we believe, one of the largest on record.

AUGUST 8, 1842. *Aneurism at the Arch of the Aorta, opening through the Sternum.*—Dr. M. S. Perry reported the following case.

A. M., aged 44, laborer, enjoyed good health in early life. Until within ten years was very intemperate. Since that time, has taken no ardent spirit. Seven years since had an attack of dyspnœa, with some cough, which lasted several days. Since then has had frequent attacks, which came on after exposure to cold. He has lost about two pounds of flesh every year for the last five or six years. Now complains of soreness in cardiac region, with pains like “rheumatism,” shooting to left shoulder and down left arm. Pain is sometimes so severe as to prevent free motion of arm—no numbness. Has some hoarseness, which he says is not constant—dyspnœa is aggravated by exercise—not increased by lying down. He cannot lie on left side—has no paroxysms of dyspnœa at night—had formerly palpitation of heart, but none now—pulse 92, of moderate fulness and force. No discoloration of lips or nails—skin natural, and digestive organs in good condition. Respiration and percussion normal throughout whole of front, except over a tumor, bounded above by clavicle and upper part of sternum, on the left by a line drawn one inch from sternal end of clavicle, below by lower edge of cartilage of third rib, and on the right by a line drawn through the middle of sternum. This tumor is nearly circular, and raised about an inch above surrounding parts. Over the tumor the respiration is bronchial, and a flat sound is obtained by percussion. The pulsation in tumor is distinct, and the two sounds of heart distinctly heard—no bellows sound. Sounds of heart healthy, but feeble—the second sound more distinctly heard as you ascend—both sounds louder over tumor than over the heart. Purring tremor quite distinct over tumor. Respiration more distinct throughout whole of right back than left. Sonorous rale heard on full inspiration over both backs.

Feb. 24, 1840. Since last examination has had several attacks of bronchitis, which subsided in a few days. Is now pretty well. Tumor has decidedly enlarged—has now a prominent apex. A week since, several hours after using considerable exercise, had soreness in tumor and about arm, was unable to sleep from pain, obliged to sit up in chair—next day was entirely relieved, and did not observe any increase in tumor till yes-

terday. Pulsation of tumor same—no bellows sound—no purring sensation—pulsations double. Right back, from an inch below lower angle of scapula to lumbar region, more prominent than left, respiration over this part louder and rougher than over other parts of same back.

May 15, 1840. Tumor now about the size of a goose egg. Pulsations of tumor strong—double, although first sound not as distinct as at last examination. Respiration heard over most of left breast, accompanied by a sort of tremor. Sounds of heart natural, but feeble.

Dec. 4, 1840. About three weeks since hit tumor against a box, and for three or four days after had dyspnœa and pain—the former increased on lying down. Since then pretty comfortable, but thinks the difficulty of breathing greater than before the accident. Tumor now measures nine and a half inches in circumference at base, and nearly one and a half in height above level of sternum. Has had a copper case made to wear over tumor to prevent external injury, and likes it much.

April 12, 1841. Tumor now measures one and three fourth inches in height, four and three fourth inches in diameter, nine and three fourth inches in circumference at base. Health never better—performs his work without much inconvenience. Physical signs same as at last examination.

Aug. 9. Tumor has increased in size. There is absorption of the upper part of sternum and a portion of the clavicle—also of sternal end of 2d, 3d and 4th ribs. Pulsation of upper part of tumor stronger than at the part most prominent. The surface is becoming irregular—no bellows sound—second sound longer than the first—sounds of heart more obscure than at last examination. The circumference at base, twelve inches. From inferior part of tumor to apex, two and three fourth inches—from superior part to apex, three and a quarter inches. Pulse regular in both wrists and alike in impulse.

Dec. 2, 1841. The whole tumor is irregular, and has four prominent points; one of these, to the right and above the central point, is brownish in color to the extent of an inch. Size about the same as at last examination. Patient complains of tightness and a sense of suffocation when lying down—has some cough and slight huskiness of voice—no expectoration. From this time till within three weeks of his death, which took place July 29, 1842, patient's health continued good, with the exception of several slight attacks of bronchitis. The tumor continued to increase slowly in size. Three weeks before his death there was slight bleeding from a rupture of some of the capillary vessels upon the apex of the tumor. In three days after Dr. P. discovered a small gangrenous spot where the bleeding took place. This gradually extended so as to include the whole of the top of the tumor, and for several days before his death the parts had sloughed so as to expose to a small extent the fibrine which lined the sac. He had an attack of hemorrhage a week previous to his death, and one two days before, both of

which he stopped by pressure. He died during the third attack. The post-mortem was made by Drs. J. B. S. Jackson and H. I. Bowditch.

On dissection, the skin over the tumor was found very thin, soft, blackish and detached from the fibrine beneath, which to some extent was fairly exposed. The ascending aorta and arch were considerably dilated, ossified and otherwise diseased in structure. From this last, just in front of the great vessels, arose the aneurism; orifice quite distinct, having regular, smooth, and rounded edges, and measuring one and a quarter inches in diameter; cavity comparatively large, and filled mostly with dark-colored fibrine. The upper bone of the sternum was destroyed, except a narrow portion on the right side, the left clavicle being quite loose. Just beyond the arch of the aorta, was a second aneurism about half as large as the first, and filled mostly with fibrine; orifice not distinct as in the first; the sac was connected somewhat with the upper part of the left lung, but more extensively and very closely with the spine on the same side, the bodies of three of the vertebræ being deeply absorbed. Thoracic aorta otherwise healthy, as were the vessels at the arch and the organs of the thorax generally. The great vein, however, which crosses from the left side to join the upper cava, was nearly obliterated. Heart flaccid and rather small, the left ventricle being only four lines in thickness; structure healthy, and so also the aortal valves.

AUGUST 22, 1842. *Excision of the Tonsils.*—Dr. J. Mason Warren read the following paper.

In 1839 I presented to this Society some remarks on enlargement of the tonsils, attended by a certain deformity of the chest, and on the operation which had been practised for their relief. Since that time I have had occasion to perform this operation on between one and two hundred patients. The results have led me to the same conclusion as stated at that time. I regret that I have not kept a sufficiently accurate account of all these cases to be able to lay them before the Society. Within the last two months I have had occasion to perform this operation of excision of the tonsils on 13 patients. Eleven of these were children. In seven of the children the sternum was excavated or otherwise deformed. Six of the 13 patients were deaf. One immediately recovered his hearing after the operation; in the others some days elapsed before the improvement took place. In all of them the breathing was more or less affected, and relief almost immediately followed the operation.

In a late number of the Medical Examiner, I observed some remarks made by a distinguished surgeon in Philadelphia, in regard to a certain change of voice following on this operation, and suggested as the probable cause the injury done to the lateral half arches of the palate by the operation, from adhesions existing between them and the enlarged tonsils. I have taken

some pains, since those remarks came under my observation, to examine a number of patients on whom I had previously operated, and in none of them could I observe, or had they observed themselves, the change of voice alluded to. In none of the 13 cases now given did this alteration exist.

There are few of the operations in surgery in which the relief is so immediate and so permanent, as in this simple one of excision of the tonsils, and the results, so far as I have observed, are uniformly favorable.

The instrument which I have most commonly used has been the guillotine instrument, with a convex instead of a spear-pointed blade. The broad shoulder of the instrument, which has been sometimes objected to, serves in the place of a spatula to hold the tongue well down, and the edges of the ring which embrace the tonsil, if not too narrow, press back the columna of the palate, and protect them from being wounded.

Extracts from Foreign and American Journals.

ANATOMY AND PHYSIOLOGY.

Case of Irideremia, or Absence of Iris; with Observations. By JOHN FREDERICK FRANCE.

Case.—Mary Hampton, aged 23, an out-patient at Guy's Hospital. She is not aware of any other member of her family having been afflicted with complaint of the eyes; but has often heard from her parents (both now dead) and friends, that she was born with a defect of those organs. She herself has no recollection of ever having enjoyed more perfect powers of vision than at present; nor can she call to mind having suffered from any inflammation in the eyes more important, or of longer duration than that which has accompanied other and more general catarrhal symptoms. During her infancy, and again six or seven years ago, her mother took her to the Moorfields' Infirmary; where the use of glasses was suggested—advice which she has not followed. The only occupation she has been fitted to pursue is that of household work.

Present State.—She is free, and ever has been, from any pain in the eyes, except that produced by exposure to strong light, which she cannot bear. Sunshine, in particular, is disagreeable to her, and produces profuse lachrymation: she therefore shuns it, preferring the dusk, when she can see better, and in comparative comfort. Objects are only distinctly seen when within the distance of a foot or two.

To the observer she presents the following appearances:—the eyelids are habitually more than half closed, and, from the permanence of this state producing an approach to entropion, and the shortness of the ciliæ, she bears, at first sight, the aspect of an individual who has been deprived altogether of eyelashes by disease. Such, however, is not the case; but, with the exception of slight catarrhal ophthalmia, the lids are healthy.

The globe of each eye is affected with an almost unceasing oscillatory movement in a horizontal direction: a symptom which, added to the spasmodic contraction of the orbicularis muscle, immediately excited on attempting to expose the eye to a good light, renders accurate observation of the condition of the deeper structures a matter of very considerable difficulty. The power of directing the eye towards an object, more particularly upwards or downwards, is much impaired.

Each cornea is partially clouded; the haze of the left occupying perhaps one eighth of its superficies, and very slight: that of the right being more dense, nearly traversing the cornea horizontally, and rendering obscure about one sixth of its surface. These are, of course, the relics of former inflammation.

The sclerotic coats are moderately healthy—perhaps rather more blueish than natural: their degree of tension is that of health. On inspecting the right eye very carefully, and looking above or beside the corneal nebula, there is observed a central opacity of the interior capsule of the crystal-

line, about the size of a large pin's-head; and a similar spot is also to be seen on the posterior capsule; the lens remaining perfectly transparent. Thus a very satisfactory illustration is afforded of the size of the space between the cornea and capsule, and, again, between the front and back walls of the cavity within which the lens is contained. In the left eye, the centre of the anterior capsule, or more superficial part of the lens, is opaque; while the posterior, appearing as if corrugated, is opaque also in the centre, to about one third of its extent; and shoots forwards, as it were, flakes of opacity into the lens on the nasal side.

With these exceptions, the entire space viewed through either cornea is of uniform brownish-black hue. The closest examination discloses no vestige of iris.

Owing to the obstacles opposed in this case to a scrutinizing inspection of the eye, which were before referred to—viz. the continued oscillation and unsteadiness of the globe, the intolerance of light, spasmodic contractions of the orbicularis, and, finally, the clouds obscuring in parts the surface of the cornea—I might still entertain some misgiving as to the real existence of this very rare malformation, and be inclined to ascribe to an unusual darkness of color in the iris, and extreme dilation of pupil or mydriasis, the non-appearance of the membrane in question. The result of the following mode of examination, however, superadded to the more direct ocular evidence, amounts to demonstration. If the observer, having gained sight of the posterior capsular cataract, and while watching it closely, gradually move his position, so as to look more and more obliquely thereupon through the cornea, he will find his view of the cataract not intercepted, until taken in so oblique a direction that the anterior edge of the sclerotic begins to intervene. Now, did ever so narrow a rudiment of iris exist, it would (leaving the ciliary ligament opposite to the junction of cornea and sclerotic to divide perpendicularly the aqueous chambers) hide the posterior capsule, viewed in the way described, before the point at which it, in this case, actually disappears.—*Medico-Chirurgical Review, July, 1842.*

Dentition of Children at the Breast. By Professor TROUSSEAU.—Suspecting that the generally received ideas on the dentition of children were not correct, M. Trousseau, from statistical observations not very numerous, has come to conclusions slightly different from the opinions generally believed.

Period at which the first tooth appears. This has been determined in 25 children; 13 boys, and 12 girls. It appeared as follows:

In 2 boys at 3 months.

2 at 4

2 at 5

2 at 6

2 at 10

2 at 11

2 at 14

Extremes, 3 months, 14 months.

Average, 7 months.

In 1 girl at 3 months.

2 at 3

1 at 4

1 at 5

3 at 6

1 at 7

3 at 9

1 at 14

2 months, 14 months.

6 months.

The average time, then, at which the first tooth appears is, from these results, six months and a half; while the general belief at present is, that

at eight months it makes its appearance. The common opinion that little girls are more precocious than boys, is also corroborated, as we find the difference of a month between the appearance of the first tooth in boys and in girls.

The first tooth is in general one of the middle inferior incisors. Of twenty-eight children this was the case in twenty-five. In two, a middle superior incisor appeared first; and in a little girl, the first molars preceded all the others.

Period at which the second tooth appears. The twenty-five children in whom a middle inferior incisor first showed, had for their second tooth, the other middle inferior incisor. The common opinion is, that this second tooth appears almost at the same time as the first; and it is quite correct. In twenty-five children, the time that elapsed between the first and second tooth, was, 1 day in 4 children; 2 days in 2 children; 3 days in 1 child; 8 days in three children; 15 days in 7 children; 30 days in 1 child; 90 days in 1 child. In six the time could not be determined by the mother.

The middle superior incisors appear next after the two middle inferior. In eighteen children, fifteen had these teeth after the middle inferior incisors. The time that elapses generally between the cutting of the inferior and the superior incisors, is more variable than is generally supposed. In thirteen children in whom M. Trousseau was able to verify this, there was a lapse of 8 days in 2 children; 1 month in 3 children; 2 months in 3 children; 3 months in 1 child; 4 months in 1 child; 5 months in 2 children; 10 months in one child.

In general, then, there is a considerable interval between the appearance of the second first and the second second teeth. It may be established as a general rule, almost without exception, that after the appearance of these four teeth, the two lateral superior incisors next cut the gum, and then the two inferior ones, so that the child has only two teeth in the lower jaw, while it has four in the upper. It is curious, M. Trousseau says, that this fact, so well known to mothers who have brought up several children, should be unknown to those who have written specially on the subject. Whilst a considerable period takes place between the first appearance of the inferior and superior incisors, the four superior incisors follow each other at a short interval. After these six teeth have come through, some time elapses before the next, which are generally believed to be the two lateral inferior incisors, appear. M. Trousseau, however, says, that as a general rule, one or several molars, and sometimes even the canine, are protruded before them. After the cutting of the four molars, and the two inferior lateral incisors, another considerable interval of time elapses, when the four canine successively appear; and then after another period, at the age of from twenty-four to thirty months, rarely sooner, the second set of molars come out.

In the second part of his work, M. Trousseau treats of the diseases incidental to teething, and especially of the diarrhœa accompanying it, and combats the opinion so prevalent, that nothing ought to be done for it. He shows that it is not only useless, but decidedly injurious to the little patients—that it weakens them, and lays the foundation of marasmus, which if not checked in time, soon goes on to a fatal termination.—*Lond. and Edin. Monthly Journ. Med. Sci.*, May, 1842, from *Gaz. Méd. de Paris*, 4th Feb. 1842.

Physiological Results of Extirpation of the Salivary Glands. By Dr. BUDGE.—Litmus paper, introduced into the mouths of a considerable number of rabbits, was changed into a deep blue color. The same was the result in the case of dogs and cats without any exception. A cat was deprived of food during two days and a half, and a dog during one day; yet in both cases was the above change in the litmus paper not the less marked. A rabbit and a cat had both their nervi vagi cut across: in both animals, till the moment of death, an alkaline reaction of the saliva was manifested. The cat lived till the fourth day. A dog had both its parotid, both its submaxillary, and both its sublingual glands extirpated; yet, to the astonishment of the author, the reaction was still alkaline in as great a degree as before. The glands themselves, after being washed, so far as to free them from all traces of blood, were cut into and tested: the reaction was alkaline, but not in so great a degree as when the paper was introduced into the mouth. The animal quite recovered, and during the four weeks it was permitted to survive, litmus paper introduced into the mouth, was always tinged blue. It was killed, and on examination a small quantity of food was found in its stomach. One bit of litmus paper laid on the stomach remained unaltered in color; another piece became slightly reddened. The acid reaction seemed less than usual; but the author adds, that in dogs whose glands had not been extirpated he has often noticed very faint traces of acid. The results in a cat, which survived the operation four weeks without the smallest apparent injury, were nearly identical.

From these experiments the author infers that the spleen is not the only gland which can be extirpated without the destruction of life. Yet no one can suppose that the salivary glands are useless. We must therefore conjecture that certain glands supplement each other; and that in the case of the removal of the salivary glands the pancreas, perhaps, eliminates the fluid which these glands usually do. It is known for certain that even the urinary secretion cannot remain in the blood when the kidneys are extirpated, and that the stomach endeavors in this case to eliminate, and *does* eliminate, genuine urine, though not, of course, in quantity sufficient for the purposes of life.

Although, according to experiments and observations on the human subject, the saliva, after eating, manifests an alkaline reaction, yet section of the vagus in brutes produces no change. The sympathy between parts supplied by the vagus and those supplied by the trigemini cannot here be taken into consideration. It is possible that this sympathy between the stomach and the salivary glands may take place through the spinal branches received by the parotid.—*Medicinische Zeitung*, No. xviii. Mai 4, 1842.

Normal Dimensions of the Heart in the Adult.—The author gives an account of the plan of measurement which he adopted, which seems to have been one calculated to ensure accuracy: of upwards of 100 hearts, of which the dimensions were taken, care was had to exclude every one which exhibited any trace of organic change. We shall only give the *mean* measurements.

Of 15 male hearts, the mean *circumference* was 9 inches 27-48ths; of 17 female hearts, 8 inches 16-48ths.

The mean *length* of the male heart was 4 inches 16-48ths; of the female, 4 inches 36-48ths.

The mean *thickness* of the *left* ventricle in the male was 27-48ths of an

inch ; in the female, 23-48ths ; of the *right* ventricle, in the male, 8-48ths of an inch ; in the female, 6-48ths.

The septum ventriculorum has, in the male, a mean thickness of 22-48ths of an inch ; in the female, 14-48ths.

The aortic orifice in the male has a mean circumference of 2 inches 31-48ths ; in the female, 2 inches 22-48ths.

In the male, the pulmonary artery at its origin has a mean circumference of 2 inches 34-48ths ; the right auriculo-ventricular orifice, 4 inches 35-48ths ; the left auriculo-ventricular orifice, 3 inches 45-48ths ; and the corresponding parts in the female are relatively less.

The following are the author's deductions : 1st. The male is larger than the female heart. 2d. The length of the healthy heart to its circumference is rather less than 1 to 2. 3d. The thickness of the right ventricular parietes to the left is as 1 to 3, nearly. 4th. The pulmonary artery is slightly wider than the aorta. 5th. The right auriculo-ventricular orifice is considerably larger than the left.—Dr. RANKING, *Medical Gazette*, No. xxiv. 1842.

Can the Male influence the Duration of the Fœtus in Utero?—The Earl of Spencer has observed that cows in calf to a particular bull belonging to his lordship carry their calves about four days longer than cows in calf to any other bull. The average period of gestation of the cow his lordship finds to be 248 to 285 days ; but cows in calf to the bull referred to do not bring forth till 290½ days. His lordship has therefore proposed the query, whether the bull can exert any influence on the duration of the calf in the uterus of its mother, and whether there be any work extant in which this question is handled?—Dr. HALL, *Med. Gaz.*, No. xxiii. May 6, 1842.

PATHOLOGY, PRACTICAL MEDICINE AND THERAPEUTICS.

Statistical Researches into the Etiology of Pulmonary Phthisis. By Dr. BRIQUET, of the Hopital Cochin.—This paper is founded on an investigation into various particulars connected with the history of 109 phthisical patients in whom the disease was far advanced, and likewise on data furnished by all the deaths from phthisis in the hospital between January 1st, 1838, and January 1st, 1841, being 182 in number.

The conclusions (for which only we have space) at which M. Briquet arrives are :

1. That during the past three years, one tenth more of men than of women have been received into the Hopital Cochin affected with phthisis : a result directly contrary to those obtained by MM. Lombard and Louis.

2. In at least a third of the patients phthisis was distinctly hereditary, and predisposition to the disease seemed more frequently to come from the father than the mother.

3. No immunity from the disease is afforded by the circumstance of being born of parents who are natives of the country, or by being brought up in the country.

4. Tall stature, a slender frame, an ill-formed chest, and convexity from the root to the point of the nails, are the only external characteristics of phthisical diathesis.

5. It occurred very seldom that the circumference of the upper part of the chest was less than that of the lower part: a fact directly contrary to the assertion of M. Hertz.

6. Those callings in the pursuit of which there is discomfort, want of exercise and of pure air, present a greater number of phthisical persons than is to be found among those who pursue different occupations.

7. A third of these patients were more subject to catarrh than other persons, and were more sensible of cold.

8. In three fifths of the patients, phthisis developed itself between twenty and thirty years of age, but more than two thirds of those whose parents had suffered from consumption became phthisical before their thirtieth year; while, of those whose parents had not been healthy, half did not show symptoms of phthisis till after thirty.

9. In four fifths of the patients there existed predisposition to phthisis, and in three fifths this predisposition was acquired.

10. Cold is the most powerful cause of the acquired predisposition; next to which are misery, privation and distress of mind.

11. Phthisis is most frequent in cold seasons, and when there are many variations in the atmosphere.

12. Four tenths of the patients had not been exposed to the influence of any occasional cause of phthisis, but in most there existed a strong predisposition to the disease.

13. Five tenths had been exposed to and suffered greatly from some exciting cause, and this cause was in almost every instance cold and damp. —*Revue Médicale, Feb. 1842.*

On the employment of the Sulphate of Alum in the treatment of some forms of Angina Pharyngea. By M. CELESTIN PERRIN.—It is by no means unusual for catarrhal affections, especially in damp situations, to leave behind them a sort of habitual chronic catarrh of the fauces. In these cases the mucous membrane is much injected, of a deep red, sometimes thickened, and the mucous follicles are very apparent and much developed. An adhesive mucus covers the parts and provokes a frequent and troublesome cough to effect its expectoration. The employment of alum gargles, of various strength, in these affections, has for some years been often resorted to. M. Petréquin, of the Hotel Dieu, has practised the insufflation of four parts of alum to one of sugar with great success; and M. Perrin has used the same means with similar results.

Encouraged by the good effects of the application in chronic cases, M. Perrin has had recourse to it in those which are acute. He mixes equal parts of alum and sugar, and blows them through a quill against the back of the pharynx. It is always necessary that the point of the quill should be even with the uvula, since otherwise the sudden descent of the velum palati may close the passage and scatter the powder on the back of the tongue, where it excites nausea and efforts at vomiting. Even in cases where the febrile symptoms run very high, the difficulty of swallowing is extreme, and the patients have on former occasions been depleted and subjected to very severe treatment, this application a few times repeated has seemed to effect a cure, and a great amelioration of the symptoms has followed its employment even once. Two cases are related in illustration, and the writer concludes by asking whether equally favorable results might be expected from this practice in cases occurring in dry and hot

countries, or whether there is something peculiar in the anginas of damp and rainy climates, as Lyons, which renders them peculiarly amenable to this mode of treatment.—*Bulletin Général de Thérapeutique. Mars, 1842.*

On the Delirium following Acute Meningitis, and its Treatment by cold Affusion. By M. RECAMIER.—In the Hotel Dieu, under the care of M. Recamier, was a man who was the subject of chronic delirium, unaccompanied by any sign of disease of the brain or its membranes. He had already had two attacks of a similar kind, the second more severe than the first, and the third than the second, but they all yielded to depletion, which in the last instance required to be repeated several times. In the same ward was another patient in whom delirium remained after symptoms of inflammation of the brain, and depended, in M. Recamier's opinion, on some modification in innervation produced by the disease, not on any continuance of the actual malady.

Two other similar cases are mentioned by him in which chronic delirium was removed by the employment of cold affusion. One was the case of a young lady in whom delirium existed unaccompanied by the signs of meningitis, but with irregular automatic movements of the hands, in which she crammed any thing that was given her into her mouth. M. Recamier began the treatment with cold affusion of water at 68 degrees Fahrenheit during five minutes, and gradually reduced the temperature to 50 degrees, and prolonged the affusion for ten minutes. It was not, however, until affusion was practised at 39 degrees that any effect was produced, but then the patient was seized with a tetanic spasm and lost all consciousness. She was at once placed in bed, warmth was applied to the surface, and she speedily recovered, and asked for her mother, for whom she had before shown a marked aversion. Pen and paper being given her, she now wrote a perfectly sane letter, requesting her mother to visit her. The affusions were still continued at a temperature of about 64 degrees for some days, and the patient recovered uninterruptedly.

In this case, which had followed an attack of meningitis, warm baths had been employed for a considerable time, without leading to any results. In the second case the same treatment was employed with success in a man who had become insane from spirit-drinking. In three different attacks the remedy had the effect of restoring his reason, but his intemperate habits were so deeply rooted that he eventually brought on a condition of permanent delirium, for which he was received into the Bicêtre.—*Gaz. des Hopitaux. Mars 3, 1842.*

Summary of the Mortality Tables in London for the Year 1841.—The following brief summary is contained in the number of our northern contemporary,* for May, 1842. It is abstracted, we presume, from the Registrar General's Report, which we have already directed attention to.

The total number of deaths was 45,284. Of these 22,995 were males, 22,288 females. 20,780 were under 15, and 24,433 above 15 years of age.

In the tables, the area is divided into five districts, and the rate of mortality is found to differ in each, according to the local situation, and the circumstances and occupations of the inhabitants. Thus, in the western district, embracing Westminster, St. James, Kensington, &c., it is 2.202

* London and Edinburg Monthly Journal of Medical Science.

per cent. ; in the northern, embracing Mary-le-bone, St. Pancras, Islington, and Hackney, it is 2.267 ; in the central, or what is properly called the city, it is 2.505 ; in the southern, embracing Southwark, Greenwich, Camberwell, &c., it is 2.539 ; and in the eastern, embracing Shoreditch, Whitechapel, Bethnal Green, &c., it is 2.558, showing a difference of .356 per cent. between the western, which is the wealthiest and best aired district, and the eastern, which includes the poorest and most low-lying parts of London, along the banks of the Thames. The average mortality over the whole, is 2.429 per cent. The central district is entirely urban, the eastern nearly so, while all the others comprehend a considerable extent of surrounding country.

The tables exhibit the number of deaths which occurred in each week, and their causes. The diseases are classed as follows : I. Epidemic, endemic, and contagious. II. Spasmodic, embracing, 1st, diseases of the nervous system ; 2d, of the respiratory organs ; 3d, of the organs of circulation ; 4th, of the digestive organs ; 5th, of the urinary organs ; 6th, of the organs of generation ; 7th, of the organs of locomotion ; 8th, of the integumentary system ; 9th, of uncertain seat. III. Deaths from old age ; and IV. Deaths by violence.

The mortality from the exanthemata and typhus, amounted to 3,840, of which 1053 were from small-pox, and 1,151 from typhus—certainly a very small number, considering the extent and circumstances of the population. The deaths from consumption were 7,326, or about 16.17 per cent. of the whole, being nearly the same proportion as in the rest of the kingdom. The mortality from the other principal diseases, was as follows : Hooping-cough, 2,278 ; hydrocephalus, 1,739 ; convulsions, 2,778 ; pneumonia, 3,668 ; asthma, 1,351 ; dropsy, 1,720 ; debility, 1,114 ; old age, 3,373. The violent deaths amounted to 1,148. The mortality in the first quarter, amounting to 13,713, far exceeded that in the others, which differed little in this respect, being 10,404, 10,406, 10,761, respectively. The month in which the greatest number of deaths occurred, was January—4,687 ; that in which the least, July—3,050, showing a difference of 50 per cent. The higher mortality of the first quarter holds good with respect to all the great classes of disease, whether epidemic, endemic, or spasmodic, with the single exception of diseases of the digestive organs, from which the greatest number of deaths occurred in the autumnal quarter, owing to the prevalence of gastritis and enteritis at that season. In the case of individual diseases, there are some exceptions to this remark. Thus, while the mortality from pneumonia, bronchitis, and asthma, was far higher during the first quarter, that from consumption was highest during the second and third quarters, and from croup in the fourth. The number of sudden deaths, from unknown causes, was greatest in the first quarter, and the deaths in child-birth were twice as numerous in the first, as in the second and third quarters.

Of the four years, during which the deaths have been registered, viz. from 1838 to 1842, the most fatal, 1838, was also the coldest ; while in 1841, the least fatal, the temperature was higher and more rain fell than in any of the other three.—*Med. Chirurg. Review.* July, 1842.

Upon "Bruit de Soufflet" and "Fremissement," as means of Diagnosis in Diseases of the Heart.—Recent authors have contributed much to cardiac pathology, and, if we credit all they assert in their books and essays,

have left but a scanty harvest to be reaped by their successors. My own experience, however, has been very unsatisfactory, inasmuch as it has not unfrequently appeared at variance with the rules laid down by authors, and I have consequently been led to believe that the means of distinguishing diseases of the heart from each other, have not yet been brought to the alleged degree of perfection, and indeed many reasons induce me to conclude that such perfection is unattainable, for we can localize diseases of the heart only by the following means : first, by the sort of derangement each induces in the circulation and its associated functions ; secondly, by the change such disease produces in the motions of the heart as felt by the patient, or as perceived by the eye or hand of the observer ; and thirdly, by the morbid sounds developed during the heart's action.

The numerous observations and dissections I have made, have convinced me, that the functional derangements produced by disease of any particular part of the heart, are seldom sufficiently characteristic to enable us to make out whether the disease be situated in the auriculo-ventricular or semilunar valves ; nay, it has frequently occurred to me, that all the symptoms supposed to be indicative of disease of the right side of the heart, have been occasioned by the diseases of the left side, and *vice versa*. So far, indeed, from symptoms being always precise enough to point out the seat of the disease, they are often insufficient to indicate its very existence, an assertion proved by numerous specimens exhibited at the Pathological Society.

The chief means of distinguishing which of the valves of the heart is diseased, is derived from the supposed direction of the sound. This is by far the most useful diagnostic mark we possess, and by it we may often, but not always, distinguish disease of the right from disease of the left side of the heart, and we may even occasionally, though not often, distinguish diseases of the auriculo-ventricular from those of the semilunar valves. Another means of diagnosis much relied on, is taken from the morbid sound accompanying, and therefore being a perversion of the first or of the second sound of the heart, but as at each motion of the heart, valves are opened and valves are closed, a morbid sound may be produced by any change of structure which permanently prevents the complete opening or shutting of the valves, and consequently the same sound may arise, either from changes of structure obstructing the advancing blood, or from changes permitting regurgitation ; in other words, it is impossible to judge at the moment a sound occurs, which of these is its cause.

As to the motions of the heart, their derangement scarcely ever indicates the seat of disease with any precision.—Dr. GRAVES, *Dublin Journal*. May, 1842.

Pathology and Diagnosis of Cancer of the Lungs and Mediastinum.—

After detailing many interesting cases both from others' and his own experience, Dr. Stokes sums up as follows :

That the facility of diagnosis mainly depends on the anatomical disposition of the disease.

That we may divide the cases with a view to diagnosis into those in which isolated tubercles exist, with the intervening tissues healthy ; those in which simple degeneration occurs without ulceration, and with ulceration ; and those in which a tumor of the mediastinum exists, causing compression.

That the diagnosis of the first case is difficult, from our being seldom able to avail ourselves of the signs of irritation and ulceration, so important in ordinary tubercles, and the fact of the equable distribution of the disease preventing comparison.

That in some cases of isolated cancerous masses, the diagnosis may be founded on the same general principles as that of acute phthisis.

That in simple cancerous degenerations of the lung, the principal physical signs are the gradual diminution of the vesicular murmur, without rale; its ultimate extinction; and the signs of perfect solidification.

That the evidences of perfect solidification are better found in this disease than in any other pulmonary affection.

That this form of the disease may exist, simply, or in combination with empyema, and may be secondary to cancerous tumors of the mediastinum.

That the sides may be symmetrical in this affection, and that either dilatation or contraction of the side may occur.

That the mediastinum may be displaced, even though the side be contracted.

That under these circumstances we may have the signs of perfect solidification, accompanied by imperfect pectoriloquism, and increased vibration to the hand.

That the mediastinum may be displaced and the liver depressed without protrusion of the intercostal spaces.

That the heart may be compressed and dislocated in this form of disease.

That the flattening of the upper part of the chest may occur from degeneration of the upper lobe.

That the absence of signs of ulceration is very characteristic of this disease.

That we have observed these signs in but a single case, and that the phenomena, though they might be produced by other diseases causing the same physical conditions of the lung, have never before been met with.

The cancerous tumors of the mediastinum generally co-exist with either degeneration of the lung, or isolated tubercles in its substance.

That they may be solid or fluid.

That they may co-exist with cancerous infiltration of the lung, or the deposit of cancer in the bronchial tubes.

That they are to be recognized more by the signs of the tumor, than by those of disease of the lung.

That dysphagia, tracheal stridor, feebleness of one pulse, difference of respiratory murmur from pressure on the bronchial tube, displacement of the diaphragm, and dilatation of the heart, may occur in this form of the disease.

That a cancerous tumor may exhibit pulsation with or without bellows murmur, but that pulsation is not always attendant on it.

That though the previous existence of external cancer may assist in diagnosis, yet that the disease may be all through internal, or the visceral precede the external cancer.

That the feebleness of pulsation connected with the extent of dulness may assist in distinguishing the disease from aneurism.

That in the advanced periods, as in aneurism, gangrene of a portion of the lung may supervene.*

* My friend, Mr. Mac Donnell, has shown, that from the anatomical disposition of the nutritive arteries of the lung, pressure upon any part of the main bronchus might cause the death of the lung. Of course, the liability to this is greater in the case of mediastinal tumors than in the simple degeneration. Dr. Greene has met with this gangrene, from the same physical causes, in aneurism.

That the following symptoms are important as indicative of this disease : pain of a continued kind ; a varicose state of the veins in the neck, thorax, and abdomen ; œdema of one extremity ; rapid formation of external tumors of a cancerous character ; expectoration similar in appearance to currant jelly ; resistance of symptoms to ordinary treatment.

That though none of the physical signs of this disease are, separately considered, peculiar to it, yet *that their combinations and modes of succession* are not seen in any other affection of the lung.—Dr. STOKES. *Ib.*

Modes of administering Copaiva.—Copaiva is most generally administered by the mouth, but sometimes in the way of clyster. It is often given in too small doses. They ought not to be less than half a drachm ; and an entire drachm, given twice or thrice a day, is the most appropriate quantity. As it is a nauseous medicine on account of the quality, permanence and adhesiveness of its tastes, various devices have been contrived for facilitating its administration. Some take it simply in water, which is stirred briskly so as to collect the copaiva in a globule in the centre. A better plan is to make it into an emulsion. For this purpose each drachm may be triturated with the yolk of one egg, to which are afterwards to be added half an ounce of some aromatic, such as peppermint or cinnamon water, and then as much simple water as pleases the patient ; or the copaiva may be dissolved in its own volume of spirit of nitrous ether, and then agitated with twice as much mucilage and four times as much water. A favorite method of giving copaiva in recent times is in the form of boluses, made by inclosing the drug in thin capsules of gelatin, which are dissolved in the stomach. This ingenious plan was contrived a few years ago in Paris, by M. Mothes, and the process for making the capsules has been kept secret. They may be made in the following manner : The body of the capsule is formed by rounding very smoothly the end of a cylinder of iron or hard wood, four lines in diameter and a few inches in length, dipping half an inch of this end into a saturated alcoholic solution of soap kept warm ; then dipping it, when the layer of soap has concreted, into a strong hot solution of gelatin once, or oftener according to the thickness desired, and, lastly, removing the capsule by a screwing motion when the gelatin is quite dry. The top is made in the same way, but shorter and a trifle wider ; and when the body is filled and the top slipped over it, they are united by rubbing over the line of junction a camel's-hair brush moistened with hot water (Feder, in Buckner's Repertorium). The form of pill, which, however, is ineligible on account of its insolubility, is best attained by sprinkling one part of calcined magnesia into sixteen parts of copaiva in a flat plate, and letting the compound stand till it thickens sufficiently to be worked into the proper shape. For some time past it has become fashionable in Britain to use what are called specific solutions of copaiva ; for which every druggist has his formula, and which have the advantage of presenting the drug in a state of solution and capable of being diluted without being decomposed. They are commonly made with solution of potash and spirit of nitrous ether, and the following is a convenient formula in use in this city : Boil gently for fifteen minutes two ounces of copaiva with two ounces and a half of aqua potassæ ; add, when nearly cool, an ounce of spirit of nitrous ether ; and when the mixture has been at rest for twelve hours, remove the intermediate liquid from the soapy sediment which falls and the lighter fluid which floats on the surface. In these

preparations a part of the volatile oil seems to be separated, and most of the resin deposited in the form of soap. M. Velpeau, not long ago, proposed to administer copaiva in the way of clyster instead of by the mouth. He found it very efficacious when given in divided doses to the extent of an ounce daily in the form of emulsion, to which a little laudanum was added to prevent its too speedy discharge from the gut. Many now prefer the pure volatile oil to any form for administering the crude drug; and though some call in question its superiority, and a few even doubt its efficacy altogether, I am satisfied from observation, as well as many reports from medical friends, that it is at least as effectual as copaiva, efficacious in less doses, and not so apt to occasion sickness. It is best given in emulsion, composed of equal parts of the oil of rectified spirit, peppermint or cinnamon water, and syrup or mucilage. Among the inconveniences attending the use of copaiva, sickness and vomiting are the most frequent. This effect may sometimes be prevented by multiplying, but diminishing, the doses; by altering the form, especially to that of solution; by uniting an aromatic water with it, or by directing the patient to chew a piece of cinnamon or nutmeg after each dose. Occasionally a sharp febrile attack is occasioned when the medicine has been taken for some days in gonorrhœa; but as this attack goes off with perspiration in twenty-four or thirty-six hours, and is commonly attended with arrestment of the discharge, it ought not to occasion annoyance, and scarcely requires any treatment. The doses of the preparations of copaivæ are, Copaivæ, m. xv., ad fl. scr. iv. Copaivæ oleum, E. m. ad m. xxx."—DR. CHRISTISON, in *Dublin Journal*.

A Letter on the Cold Water Treatment of Priessnitz at Graffenberg.—"It requires great patience and perseverance to go through the cold water cure, and it is decidedly the most discouraging of any other. I shall now give you an exact account of what I have to go through every day, as well as all other persons who are able to bear it. The attendant comes into my room at 5 o'clock, A. M., with a wet sheet as cold as ice. I get up, while he puts a large, thick blanket on the bed over which he lays the sheet, which I have to stretch myself on, when he wraps it close all about me, and then regularly packs me up, so that I am unable to stir a limb, and then puts a soft down bed over all. I remain in that enviable state for one hour; my first impression was that I should be perished to death: but in about fifteen minutes I was in a most comfortable heat and generally slept until 6 o'clock, when the man enters and unpacks me, taking the sheet away, leaving the blanket close about me, when I then go to the bath room, which is situated but a few steps from my bed room, when I plunge in head and heels. I am then well dried, and after being dressed, I set out to walk until 8 o'clock, when I go to breakfast, first taking three or four tumblers of cold water, and about six more before night. Fancy about three hundred persons from all nations sitting down on bread, butter, and milk, there being no tea or coffee allowed; we have also abundance of strawberries, so that I assure you we all feel perfectly content, and enjoy it much: at 10 o'clock I must be in my room to undress and take a douche bath, which at first I did not get enamored with. The water is conveyed in wooden pipes from the mountain, and is as cold as possible. When that is over and I am dressed, I have but a short time to walk, as I must be in my room again at half past 11 o'clock, where a sitz bath is brought in, where I remain sitting for twenty minutes, after which I have till 1 o'clock to amuse myself in the best way I can, when the dinner bell rings

and we all congregate as we did in the morning. The room is a very fine one, being 120 feet long by 50 broad and capable of dining 500 persons, which number and more are here under cure, but a great many stop at Frywalden, a small and neat town one mile, and where Priessnitz goes twice a day to visit his patients. You would suppose I had the remainder of the day to myself, but not so, for at 5 o'clock I must again go into the wet sheet, and take the bath after, as in the morning. We meet at 8 to supper, which consists of the same fare as at breakfast; I am generally in bed by ten, but not before the man comes in with two long wet linen bandages, which he puts round my waist, and at the back of the neck, and between my shoulders, by way of making me *comfortable* for the night. You can fancy from the above how I have to pass my days here, that I have not much idle time on my hands. I did not mention that in addition, I have to swallow from twelve to fifteen tumblers of cold water. Graffenburg is a very high hill in the centre of three valleys, and what makes it very picturesque, it is all finely wooded at the top, and walks made all through, and on the sides, with numerous seats of all dimensions, placed for the company; and an amateur band comes from Frywalden twice a week to play, and on every Sunday there is a full band that plays all the time we are at dinner, and again after supper, when such as are inclined commence dancing."—*Dublin Journal of Medical Science*.

Dr. BYRON on *Osteo-Sarcoma of the lower Jaw Bone*.—The following inferences are fairly deducible from what is known on the subject of osteosarcoma of the lower jaw-bone:

1st. The disease almost always commences in the cancellated structure of the bone, and has usually, if not always, a cystic origin, which it maintains, more or less perfectly, throughout its entire growth.

2nd. The disease is always (as far as recorded facts go) mild, under the ages of 28 or 30 years, and although it does not necessarily become malignant after that period of life, still it frequently does so; ultimately involving the soft parts in its neighborhood, and *uniformly* assuming the characters of carcinoma.

3rd. Osteo-sarcoma of the lower jaw-bone is almost always curable by free excision before the soft parts become involved in the disease, which they never do in the benign form of the disease, nor for some time, often several months, after it has changed into carcinoma, or the malignant form.

4th. That cancer of the face, especially of the bones, admits of cure more frequently than when seated in any other part of the human frame; cancer scroti, chimney sweepers' cancer, perhaps excepted.

5th. Ligature of the carotid artery is unnecessary previous to, or during the operation of disarticulation of the jaw-bone, as exemplified in Mr. Cusack's cases and mine.

6th. Stuffing the wound with charpie or lint seems to be in most cases unnecessary, and if permitted to remain in the wound beyond eight or ten hours, would most likely excite undue inflammation. No contrivance seems requisite to prevent a retroversion of the tongue upon the pharynx and epiglottis when the bone is divided posterior to the mental attachment of the digastric and anterior fibres of mylo-hyoidei muscles, as will generally be the case, nor will any contrivance prevent the trifling retraction of the muscles of the face occasioned by their division and want of support.—*Dublin Journal of Medical Science*.

Pathology of Typhus.—Rokitansky first boldly announced the doctrine that the typhous product is as peculiar, and stands in the same relation to the disease producing it, as the matter of scirrhus or tubercle does to the morbid affections producing these formations; and that, in the case of typhus, this cause is a *dyscrasia*, expressing itself by a tendency to the deposition, in certain localities, more especially in the ileum, of a substance as peculiar in its nature as the matter of scirrhus or tubercle. The authors, then, in drawing this alleged analogy between tuberculosis and typhus, point out the peculiar mode and character of the tubercular deposit, and affirm that precisely similar to this, is what Rokitansky teaches to be the typhous process. In one important particular they seem to differ. Tuberculosis is a chronic, typhus a rapid disease; in the former, moreover, there are always distinct local symptoms, and seldom general fever; the contrary, in the latter. But if we could conceive a variety of tuberculosis, equally rapid in its course as typhus, presenting no obvious local symptom, and attended with violent fever, the resemblance between this disease and typhus would be obvious. Now it so happens there is such a disease, which has been adverted to by some of the most recent writers under the name of acute tuberculosis. One case has been witnessed by the authors, which was characterized by great prostration, dry tongue, burning skin, quick pulse, stupor amounting almost to coma, without any indication of the peculiar disease being discoverable either by general symptoms or the stethoscope. This disease generally occurs in the course of chronic phthisis, but sometimes as an independent affection. The appearances, on dissection, are an almost universal dissemination of very small tubercles over the surface of the lungs, liver, kidneys, and generally also over the arachnoid membrane.

There are two theories as to the cause of typhus: the one of which is, that the disease is an essential one, without any local lesion to account for the symptoms, and that any appearances of local affection which present themselves are merely incidental, and neither cause nor characterize the disease. The other view is, that they are symptomatic of inflammation of the intestines, or of some other organ. Against the first view, it is urged that in some forms of the disease a lesion of the intestines, quite peculiar, is generally present; and although it is doubtful whether the disease can exist without the lesion, it is certain that the lesion never exists without the disease. This proves the lesion to be, if not the pathological cause, yet at least the anatomical symptom of the disease. On the other hand, it is urged that these local changes are not always present; that the severity of the disease does not correspond to their greater or less development, &c. Now Rokitansky explains these seeming anomalies, by holding that as the scrofulous diathesis may be present without the formation of tubercle, so typhous dyscrasia may exist with very little, or even altogether without typhous matter. The local lesion may be small or null, but the dyscrasia which the lesion indicates is great. Continental typhus is generally characterized by deposits, usually in the ileum; British typhus is more usually without local symptoms, and the authors cannot see how it is possible to separate them into distinct diseases, without the arbitrary division of two groups of morbid phenomena, much more closely resembling each other than is ordinarily seen in cases of any epidemic, as for example, scarlatina.—DRS. DRYSDALE AND RUSSELL, *London and Edinburg Monthly Journal of Medical Science*, No. iv. April, 1842.

Case of a Pin passing from the Appendix Vermiformis into the Bladder.
By WILLIAM D. KINGDON, M.D., Physician to the Exeter Dispensary.—J. P. aged 7. In the early part of January, 1836, he awoke in the night time, complaining of great difficulty of micturition, not being able to pass more than two or three drops of urine at a time. In this state he continued, suffering little pain, and that only from the retention of urine, for upwards of a week; when one morning, making greater efforts than usual, he perceived something of a whitish color moving about at the orifice of the urethra, and taking hold of it, drew out a female worm (*ascaris lumbricoides*), which was followed by an immediate relief from the foregoing symptoms. No farther notice was taken of the circumstance until twelve or thirteen months afterwards, when the dysuria recurred and lasted nine or ten days, at the expiration of which term he had severe pain at the neck of the bladder, and said that there was something crawling in his penis; on examination, his mother discovered another worm, and drew it out as in the former instance, and with the same relief. In six months afterwards the same symptoms returned, but subsided in a few days on the evacuation of another worm. On the fourth of October, 1838, he complained of pain in the perinæum and at the extremity of the penis, which continued night and day for more than a week, when it entirely subsided on the passage of another worm. He remained free from pain until January 11th, 1839, when the same distressing symptoms again recurred with aggravated severity, and lasted for two or three days: during this period he was unable to emit any urine, and it was for the first time thought necessary to call in the aid of a medical practitioner, who, on introducing the catheter, drew off a large quantity of water; in the course of the same afternoon a worm crept from the urethra, and, as before, the little sufferer experienced immediate relief. The pain however recurred much more frequently, and the urine was obliged to be drawn off repeatedly. The boy's appetite began to fail, and he lost flesh rapidly. Various professional gentlemen were consulted, but he received no benefit, and gradually became worse.

On the 8th of February, 1839, he came under Dr. Kingdon's care in the Exeter Dispensary. He then complained of occasional pain in the perinæum and at the extremity of the penis; to make use of his own words, "Like as if there was a worm there, wanting to poke his way out." There was at times difficulty in passing his urine, but not requiring the use of the catheter. Under the use of sedative medicines, he was much relieved, but on the 12th of April the symptoms returned with more severity than ever. The catheter was introduced, and afforded instant relief; shortly afterwards a worm made its way through the urethra, as on a previous occasion. Up to this period the boy had always voided his urine through the natural passage; but subsequently *per anum*. The pain now recurred two or three times in the course of the day, but was alleviated as soon as he could evacuate the urine from the bladder; the pain was likewise lessened on pressing the perinæum with his hand; occasionally, too, a day would pass without any uneasy symptom. In the beginning of May, he was sounded, but no calculus was found. He became much worse, and frequently complained of the worm attempting to force its way out, and when in great pain a quantity of purulent matter oozed from the urethra. On the 20th of October he became blind; the pulse averaged 120; the countenance was anxious; the appetite for food very small, and

that only for liquids. Very little urine was voided for the space of a fortnight, and his pain was more severe than ever; for this he took one-eighth of a grain of belladonna every five or six hours, and with considerable temporary relief. On the 24th his sight returned, and he became so much freer from pain that his medicines were omitted. On the 9th of November he was entirely free from pain, and any urine secreted was voided through the natural passage. Two worms were brought away by stool, and a third was found in the bed next morning. Still he became gradually weaker, and on the 15th died.

Examination of the Body.—Emaciation. The whole intestinal canal discolored and presenting traces of inflammatory action, but the colon and rectum much more so than the small intestines; mesenteric glands enlarged; the *appendix vermiformis*, instead of occupying its natural situation, had descended into the pelvis, and about an inch from its termination was firmly united to the superior and lateral portion of the bladder a little above the junction of the ureter with this organ; the bladder itself was smaller than natural, and firmly contracted at its lower part upon a hard substance, which, on laying open the cavity, proved to be a calculus of the triple phosphate form, measuring in length one inch and six-tenths, and in circumference two inches and nine-tenths; the parietes of the bladder were much thickened, and on laying them open about half an ounce of purulent matter escaped; the calculus was firmly pressed upon the internal orifice of the urethra, preventing almost entirely the flow of urine in that direction; the mucous coat of the bladder was ulcerated in two places, and on the mesial side of the opening of the right ureter, and a little above it, were two fistulous openings, the septum between the two being very slight, communicating with the interior of the *appendix vermiformis*; both ureters were much enlarged and inflamed, and both kidneys larger than natural, and so completely filled with pus that scarcely a healthy portion was discernible.

The calculus being carefully divided, displayed in its centre a large pin, which, as Dr. Knight justly remarks, satisfactorily accounts for the singular appearances above detailed. The poor boy must have swallowed the pin, which, after traversing the small intestines, formed a lodgment in the *appendix vermiformis*; here the irritation caused by it must have given rise to inflammation and adhesion of the process to the exterior of the bladder, and subsequently, by ulceration, to the passage of the pin into the urinary bladder, where it formed the nucleus of the calculus discovered after death, though not detected during life. The fistulous communication with the bladder will likewise very readily account for the voiding of the urine from the anus, the natural orifice being closed by the calculus; and also for the passage of the worms through the urethra on the several occasions mentioned.

A curious case.—*Prov. Med. and Surg. Trans., in Med. Chirurgical Review.*

SURGERY.

Autopsy of the Duke of Orleans.—The following details, in which the most perfect confidence may be placed, have been furnished us. It will be seen that the prince died of an “*ecrasement*” * of the head, a name given by Dupuytren, in his clinical lessons, to the gravest and most complicated lesions produced by physical violence. In truth, this lesion comprehends concussion and rupture of the brain, with fracture of the skull, and in this case even luxation—that is to say, the separation of the sutures. The duke, therefore, presented an instance of all the possible injuries of the head.

This class of injuries, without division of the integuments, is usually produced by the fall of a beam, or a large stone; the passage over the head of a heavy laden wagon, or train of artillery; the fall of a horse upon his rider, and especially by a cannon ball striking the head obliquely. The same may also result from a fall upon the head from any great height. Now the carriage of the prince being quite low, the body must have been impelled with great force, as its weight alone could hardly account for so complete a destruction of the injured parts. The two forces must have been directed in such a manner that the head supported the whole of the shock, or else we must suppose an extreme fragility of the bones, as in the case of the unfortunate Bennati.

Examination of the body, forty hours after death.—*Exterior.* Commencement of putrefaction, especially on the abdominal and posterior regions of the trunk. Cadaveric rigidity of the limbs. Marks of contusion on the right cheek and eyelid and corresponding side of the forehead. Extensive sanguineous tumor on the posterior and right side of the head. Bruises on the knees, the left hand, and over the left trochanter. Sanguineous infiltration of the soft parts covering the superior, posterior and lateral regions of the head, more decided on the right posterior side than elsewhere. Separation of the left lambdoidal, squamous, mastoid, sphenoidal and speno-petrous sutures. Numerous fractures, divisible into three series.

1. *Right side of Cranium.*—One fracture leading from the right side of the lambdoidal suture, crossing just above the posterior and inferior angle of the parietal, through the squamous portion of the temporal into the temporal fossa and terminating on the greater wing of the sphenoid bone.

2. *Left side of the Cranium.*—Another fracture extending from the left side of the lambdoidal suture, dividing the temporal from before backwards into two portions, separated the squamous portion of the temporal from the rest of the bone. (The squamous suture being ruptured as before mentioned, this part of the bone was attached only to the soft parts.)

3. A third fracture split the sphenoid bone transversely through the sella turcica. These different fractures and separations of the sutures, divided the cranium into two portions; an anterior and superior, including the superior parts of the two parietal, the squamous portion of the two temporal, the frontal, the ethmoid, and almost the whole of the sphenoid bones—a posterior and inferior, including the occipital, the lower portions of the two temporal and parietal, and the posterior part of the sphenoid

* It is impossible to translate this word conveniently; its meaning will be sufficiently evident.

bones—this division allowing of a motion of these two portions of the skull upon each other.

The brain was very voluminous: its anterior inferior portion, quite to the fissure of Sylvius, was reduced to a complete pulp to the full depth of the convolutions. A similar, though less extensive alteration behind and to the right of the brain. In the cavity of the arachnoid there was a sanguineous effusion to some extent. The subarachnoid tissue was extensively infiltrated with blood. A few drops of bloody serum in the ventricles. The spinal marrow and the vertebral column were perfectly sound.

Bloody effusion into the pleuræ. Lungs gorged with blood, but without any morbid adhesions. Heart and pericardium normal. Abdominal viscera healthy.—*Gaz. des Hopitaux*.

Cure of Traumatic Tetanus by Division of the Nerve supplying the wounded part. By Professor PECCHIOLO, of Siena.—Two cases are related in which this method was successfully employed. The first patient was a lad 16 years old, who had received a lacerated wound of the great toe of the left foot, and in whom after severe traumatic fever the signs of tetanus set in on the third day from the reception of the injury, the wound at the same time being highly inflamed, and the whole foot painful. The branch of the internal saphenus nerve going to the toe was divided a few hours after the tetanic symptoms were established; the pain in the wound immediately ceased, the convulsions became less and gradually disappeared, the fever continued only two days longer, and the patient was ultimately discharged quite well. The second case was that of a man 30 years old, who had received a wound from an axe across the left foot, and in whom signs of tetanus appeared on the fourth day. He, as is usual in Italy, had been profusely bled for the fever that followed the injury to his foot. On the day after the tetanic symptoms were completely established, the anterior tibial nerve was divided an inch above the wound, which was acutely inflamed. The symptoms subsided more slowly than in the former case, but they at last ceased, and he also was discharged cured.—*Bull. del Sc. Med. Marzo, 1841, in Br. & For. Med. Rev., July, 1842.*

On Fractures of the Lower Extremity of the Radius. By M. VELPEAU.—M. Velpeau entirely contradicts Dupuytren's account of the ill consequences of this injury when treated as a sprain or a dislocation, and says that while he has seen many cases, which thus treated, have recovered with scarcely any deformity and no loss of motion, he has known many more which, though treated carefully with approved apparatus, have presented all the bad results of stiffness of the joint and defective power of the muscles. He believes that all the apparatus hitherto described do more harm than good; and says, the only useful mode of treatment is that with the dextrine bandage. After reducing the fracture he puts a compress, wet with camphorated spirit, round the wrist, and applies a dry bandage very lightly from the roots of the fingers to the middle of the arm. Over this he places graduated compresses reaching to the beginning of the metacarpus, and then an anterior and posterior splint of moistened pasteboard, which are moulded exactly on the parts they have to cover, and descend to the roots of the fingers. A bandage wet with starch is then rolled in a double layer, from the fingers to a short distance above the elbow; and, till it has dried, all the parts are kept in their places by two long wooden

splints. These last, however, are removed after six and eight hours, and the part left in its immoveable bandage, supported in a sling, for from twenty to thirty days, by which time the union of the fracture is generally perfected. There are but few cases, M. Velpeau adds, in which this method of treatment is not sufficient.—*Br. & For. Rev. from Gaz. des Hôpitaux, Jan. 1842.*

Dislocation of the Thumb. By M. RADAT.—This was a case of dislocation of the last phalanx of the thumb backwards. A soldier was running on a moist clay soil, when he slipt, and putting out his hand to save himself, his thumb struck in the stiff ground, and, as it was thus fixed, he fell over it. The symptoms were, considerable shortening of the thumb, retroversion of the phalanx in the direction of extension, so that it formed almost a right angle with the metacarpal bone, immobility of the joint, and a prominence on the palmar surface. It was reduced in the following manner: a piece of stout bandage was taken with a hole in its middle, through which the thumb was passed; the two ends then being carried forwards, were strapped close down upon the dislocated phalanx, and extension made by pulling them while another person held the metacarpal bone, and a third person pressed in the phalanx as soon as it was drawn nearly to a level of the joint.—*Br. & For. Rev. from Gaz. Méd., Mars, 1842.*

Radical Cure of Reducible Inguinal Hernia. By Dr. C. HALLER.—Seven cases are given. The operation, as detailed in the first of these, was as follows: The patient, a man of twenty-three years, had ruptured himself in 1837. In 1840, when the operation was performed, his hernia, which was on the right side, had attained the size of a hen's egg, was soft, elastic, and contained a small knuckle of intestine. It made its appearance on the patient coughing or violently exerting himself, but receded on his assuming the horizontal position. The inguinal ring was so far enlarged as to admit the index finger. The rectum having been emptied by a clyster, the scrotal integument was invaginated in the inguinal canal, by the index-finger of the operator; while, with the right hand, by means of the *sonde à dard*, two stitches were made; the one as high as possible on the inner crus of Poupart's ligament; the other just over the angle of the two crura. A ball or cork of lint was introduced into the loop thus formed on the thread; traction was applied to one end of the thread, by which the lint-ball was carried as far as possible up the inguinal canal; the double threads were then separated, and tied down over two quills united by sticking plaster. Ice was applied to the seat of operation; the testicles were supported; the patient was ordered to bed, and put on low diet. There were slight pain and redness, but considerable swelling and hardness around the cylindrical aperture; and on the sixth day there were light febrile symptoms. As suppuration commenced from the punctures, the threads were loosened; the lint slightly withdrawn, and thus a free exit permitted to the matter. Warm applications to the part, daily ablution, and syringing of the invaginated integument, laxative clysters, constituted the treatment. The suppuration continued during fourteen days, and as it declined, the integument gradually subsided into the inguinal canal. On the 28th day from the operation, the patient, with the aid of an elastic band, could stand up, and move about a little. The inguinal canal was appreciably narrow-

ed, and even violent coughing or straining did not reproduce the hernia. In nine months the patient dispensed with the truss. In two or three of the other cases the cure was only temporary, the hernia again descending and carrying the integument before it. But in several instances the operation has been successful.—*Br. & For. Med. Rev., from Oesterr. Medicinische Jahrb., Marz, 1842.*

Operation for Artificial Anus.—The object of this paper is to show the superiority of Amussat's method of operation over that of Callisen, since by the latter the peritoneum is twice opened; by the former that membrane is left untouched. The author details a very interesting case of Amussat's, at which he himself was present. It occurred on the 20th of January last. A child, within a few hours of its birth, was taken to M. Larrey on account of some impediment to the exit of the fæces. A cul de sac, about an inch and a half from the anus, was detected. M. Larrey having tried without success the introduction of the catheter, plunged a trocar into the cul de sac (as was supposed), but no meconium followed the withdrawal of the instrument. The child was brought to Amussat; it was now forty-eight hours old. The abdomen was hard and distended, and the child's face dusky. It had vomited frequently. Dr. Amussat, on examination, was led to believe that about two inches from the anus there existed an interruption of the rectum, the calibre of the gut being at this point totally obliterated; and he was of opinion that it was totally impracticable to form an artificial anus either in the anal or coccygeal regions, but that an incision into the colon, in the left lumbar region, afforded the only chance of life to the child. Amussat's mode of operation has already been described in this Journal.

The case, up to the time of report (four weeks from the date of the operation), has done well. Tepid injections are administered every twenty-four hours, and the fæces escape readily through the artificial anus. A small tent is kept constantly in the aperture, which prevents the closure of it.—*Mr. PARROTT, Med. Gaz. No. xxvii., 1842.*

Operation for Artificial Anus.—"Amussat," remarks Mr. Teale, "has shown that the failure of the operation on the dead subject was owing to the intestine being empty, and that in such cases as require the formation of an artificial anus, the colon is greatly distended, in which condition the layers of the peritoneum, forming its imperfect mesentery, are so far separated as to admit of the intestine being reached without opening the peritoneum. He has farther introduced an important modification of the operation of Callisen, by adopting the transverse instead of the vertical incision of the muscles." The operation, as performed by Mr. Teale, was as follows. The child seems to have died the sixth day after the operation: "The patient being placed upon a table, on the right side, with the face and abdomen inclining downwards, Mr. Teale made an incision through the integuments four inches and a half in length, extending forward from the outer edge of the sacro-lumbalis and longissimus dorsi muscles, midway between the lower ribs and the crest of the ilium, nearly parallel to the latter. The different layers of aponeurosis and muscle having been divided in succession upon a director, a considerable mass of fat was forcibly protruded at the wound. By the finger the packets of fat were detached, and the posterior surface of the colon was very readily felt, extremely tense

and elastic, and was soon exposed to view, its pale blue tint and translucent aspect contrasting strongly with the opaque white fat in the neighborhood. Two temporary ligatures were passed through the muscular and mucous coats of the colon, and a considerable quantity of air escaped through the punctures, which so far diminished the tension of the intestines, that Mr. Teale was enabled to pinch up a fold of it, and to open it with the scalpel, after which there was a profuse discharge of air and liquid fæces. The opening in the intestine was further dilated in a vertical direction by a probe-pointed bistoury to such an extent as to allow of the introduction of three fingers. The edges of the intestinal aperture were then fixed to the external wound by four points of suture, and the wound of the integument was united by two twisted sutures. The operation being completed, Mr. Teale and other surgeons present introduced the forefinger into the artificial anus, and ascertained that the colon immediately below the aperture formed a thickened corrugated pouch, from which no opening into the lower part of the intestine could be detected without instituting a more tedious search than was considered justifiable. The intestinal tunics forming this pouch, although much thicker and firmer than natural, did not communicate to the touch the indurated feeling of scirrhus. On passing the finger upwards into the descending colon, it was found to be capacious, its coats thin and elastic, possessing a perfectly healthy structure."—Mr. TEALE, *Prov. Med. & Surg. Jour.*, No. xxv., 1842.

Purulent Ophthalmia of New-born Infants.—M. Reville-Parise tells us, as the result of his experience in this disease, that leeches, blisters, and emollient applications to the eyes, are rather hurtful than advantageous; and that by far the best mode of treatment consists in the repeated instillation of a solution of the nitrate of silver—from two to four grains of the salt to an ounce of fluid—along with the exhibition of mild purgative medicines.

M. Cunier is equally favorable to the employment of the nitrate, but he prefers a much stronger solution, or, what he considers still better, an ointment made by blending the salt with lard. He advises that the action of the application should be confined chiefly to the conjunctiva of the palpebræ. M. Cunier states, as the result of his extensive experience, that in by far the greater number of cases of purulent ophthalmia in new-born infants, the disease is attributable to the direct application of leucorrhœal matter to the eyes during the act of delivery.

Dr. Durre of Halle employs an ointment—composed of nitrate of silver two grains, acetate of lead three grains, and lard three drachms—also blisters behind the ears, and a weak solution of the corrosive sublimate—one quarter of a grain to an ounce of water. He recommends also that frequent doses of calomel and rhubarb should be given at the same time. When the purulent discharge diminishes and gives way to one that is more watery, an eye-wash with the laudanum liquidum of Sydenham is one of the best applications.

Dr. Rupp tells us that he trusts chiefly to the use of a solution of the corrosive sublimate, one grain to the four ounces of water, as a topical remedy in the treatment of purulent ophthalmia in infants.

M. Schwarz recommends the application of strong tartar emetic ointment to the nape of the neck, to produce a full crop of pustules, with the view of drawing the morbid action from the eyes.—*Med. Chirurg. Rev.*, July, 1842.

Scrofulous Ophthalmia.—M. Negrier has, in a very able memoir published in the Archives Générales for last May, directed the attention of the medical profession to the remedial powers of various preparations of walnut-leaves in scrofulous disease. The infusion and extract are the best forms for internal administration; and a very useful collyrium is prepared from the former, to which the tincture or the wine of opium should be added. Iodine or some of its preparations may be advantageously given at the same time.

The muriate of barytes, as an internal remedy, is highly spoken of by Dr. Payan of Aix: he considers it as one of the most valuable anti-scrofulous remedies that we possess; more especially in cases where much irritability or erethism exists in the eyes or elsewhere.

Dr. Otto has published several papers in Caspar's Wochenschrift to prove the efficacy of the extract of conium, administered in tolerably large and gradually increased doses.

Dr. Erdman, in Graefe and Walther's Journal, dwells at some length on the excellent effects of quinine in some of the most obstinate cases of scrofulous ophthalmia. His practice agrees in this respect with that of many of the British oculists.—*Id.*

M. Stromeyer on Spasm of the Thumb in Writing.—The celebrated Hanoverian surgeon, M. Stromeyer, professor of surgery in the University of Erlangen, has published the reports of two cases of this very troublesome complaint, in which he tried the effect of dividing certain muscles of the affected thumb.

Before narrating these, we wish to allude to a few circumstances connected with what has been called by some, "the writer's cramp," as it would seem that more than one morbid state of the digital muscles or tendons is included under this appellation. In the Medico-Chirurgical Review for April, 1840, will be found a short notice of several cases, from one of the German Journals, of spasmodic tremor of the fingers in writing, the tremor in some instances extending up the fore-arm and arm, and accompanied with a greater or less degree of pain. In M. Stromeyer's cases, it seems that the thumb was almost exclusively affected; while in those related by professor Langenbeck, of Göttingen, in a recent number of the Allgemeine Zeitung für Chirurgie, &c., the affection appears to have consisted chiefly in a spasmodic contraction of one or more of the external muscles of the forefinger. In one case, he divided the common and proper extensors of this finger; but the result was anything but fortunate; and we understand that in two other similar cases still worse consequences ensued. We shall find that M. Stromeyer was more fortunate, at least in one of the following cases.

Case 1.—A gentleman, 32 years of age and of a delicate constitution, had for two years been afflicted with what has been called the *writer's cramp* (spasmus habitualis flexoris pollicis longi). It had become so distressing that he was quite disabled from writing with his right hand; all that he could do was merely to scribble a few almost illegible words; and often before he could do even this, a convulsive movement of the thumb came on, jerking the pen fairly from between his fingers and scattering the ink about. And yet, strange to say, he could use his right hand for doing any thing else without difficulty or inconvenience. While the patient was writing, it was obvious that the muscles of the thenar eminence were un-

usually rigid—a circumstance which naturally suggested the idea that these muscles were the seat of the spasm. As every thing that could be thought of had already been ineffectually tried to relieve this most distressing affection, M. Stromeier determined to divide the small muscles of the thumb, avoiding any injury to the tendon of the long flexor. The operation had certainly no good effect; for the spasm continued as bad as ever, and to this there was unfortunately added a loss of sensation in the palmar face of the thumb. M. Stromeier was now convinced that the action of writing was dependent upon the long flexor of the thumb, and he wished to divide it; but the patient refused to submit.

Case 2.—A schoolmaster, 45 years old, robust and plethoric, has for nearly fifteen years been affected with the *writer's cramp*, which prevents him not only from writing, but also from playing on musical instruments. When he attempts to write he is obliged to steady the thumb of the right hand with the thumb and forefinger of his left one, and, even with this assistance, he cannot do more than write a few lines at most. When he touches the notes of a piano, the thumb is immediately drawn in towards the palm of the hand, and the second phalanx is powerfully flexed. And yet this patient can use his right hand in all other manual exercises without trouble or unusual fatigue. During the efforts to write, there is no apparent rigidity of the small muscles of the thenar eminence, as was observed in the preceding case. This circumstance, added to the *brusque* flexion of the second phalanx in playing upon the piano, induced M. Stromeier to try the section of the long flexor muscle of the affected thumb; although this muscle did not seem at all contracted, nor to impede in any way the free movements of the thumb. The deep seat of the muscle made the operation somewhat difficult to divide it alone and without injury to any other parts. The patient being made to bend as strongly as he could the first phalanx of the thumb, at the same time that it was forcibly drawn outwards, M. Stromeier inserted, about the middle of this phalanx, a narrow curved *tenotome* at the side of the tendon, down to the bone; the point of the instrument was passed under the tendon, and this was divided at a single stroke by moving the hand “*en bascule*.” When the instrument was withdrawn, the sensibility of the thumb was found to be much impaired; the dorsal surface recovered it on the first, and the palmar surface on the fourth day after the operation: upon the latter day the power also of moving the second phalanx returned. On the 15th day the patient made an attempt to write and to play on the piano: he did not experience the slightest cramp, and found that he could do both acts with the greatest ease.

Experience alone can determine whether the simple section of the long flexor of the thumb will be found sufficient for the cure of this most distressing complaint, or whether it will be sometimes necessary to divide any other muscles likewise.

M. Stromeier dwells at considerable length on the influence which division of the muscle of a limb exercises upon its sensibility. This influence is the more decided in proportion as the muscles are more powerful and active. Hence it is usually very marked in cases of accidental rupture of the tendo-achillis in robust persons; the limb becomes almost quite insensible, and this loss of sensation continues more or less until the two ends of the divided tendon become united. The return of sensibility is usually indicated by a feeling of prickling or creeping in the part. When

the muscles to be divided are considerably wasted and have lost much of their energy, the loss of sensation is generally much less considerable. These phenomena are especially remarkable after the section of the digital tendons: the loss of sensibility is usually very decided: it is sometimes however limited to the palmar surface when the flexors alone are divided. The sensibility usually returns—but in most cases not till then—with the returning motility of the member. It is very questionable whether this loss of sensation is dependent upon the division of any nervous filaments; if it were so, would it cease so soon as we observe it to do? Genuine paralysis from section of a nerve does not cease so rapidly. It is certainly not easy to explain the circumstances; and it may be wise therefore at present to state the fact, without endeavoring to explain it.—*Med. Chirug. Rev., from Bayerisches Med. Corresp. Blatt.*

Two Cases of Injury to the Head, followed by Symptoms of Compression produced respectively by Extravasation of Blood and Formation of Pus relieved by Operation. By EDWARD COCK.—Speaking of compression, Mr. Cock remarks:—It is almost invariably preceded or accompanied by concussion, and may depend on various causes—on depressed bone, on extravasation of blood, or, at a subsequent period, on the formation of matter within the cavity of the cranium; or again, on a combination of these causes. When bone is depressed, the appearances of external violence will generally indicate the seat of the injury, and suggest the propriety of making a further investigation; but this is by no means necessarily the case where compression ensues from extravasation of blood or from suppuration. A host of difficulties then surround the case, and embarrass the diagnosis. Blood may be poured out between the dura mater and the skull, or within the cavity of the arachnoid; or it may be effused over the surface or deeply within the substance of the brain itself. It is the first of these only that we can expect to relieve by an operation; and our success will then probably depend on the absence of any other important lesion to the contents of the cranium. The surgeon may be called on to determine, 1st, whether the compression is produced by extravasated blood; 2ndly, in which of the three situations, as regards the brain and its membranes, the blood has been poured out; and 3dly, the spot where the trephine should be applied, if an operation be deemed advisable. It not unfrequently occurs, that symptoms of compression become manifested, without any well-marked local indication of the seat of mischief; that the most careful examination fails in detecting the appearances of external violence; that the history of the accident is defective in affording us the desired information; that the surgeon is thus thrown entirely on the resources of his physiological and pathological information, and must decide, from the progress of the symptoms and the effects produced on the different parts of the patient's frame, whether the mischief is of such a nature, and so located, as to admit of relief by application of the trephine.

Mr. Cock relates two cases. They are both interesting. One was that of a man who, after a fall, had stertorous breathing, &c., and paralysis of the right side, with severe scalp wound over the left parietal bone. Mr. Cock cut down, but could find no fracture. He then proceeded to remove a portion of the bone above and behind the anterior inferior angle with a full-sized trephine. The moment the elevator had detached the bone, a gush of blood took place through the opening, and a clot was discovered

beneath. On passing the finger into the cranium, it entered an extensive mass of coagulated blood, which extended in every direction, as far as the finger could reach, and was evidently of considerable depth. The interior of the cranium, as far as could be felt, presented no irregularity or trace of fracture. A small quantity of the coagulum was removed with the handle of a tea-spoon, and the wound was then covered with lint dipped in water. The deep stertor of his breathing had ceased almost on the instant that the bone was raised, and he was evidently relieved by the operation. Suppuration ensued between the bone and dura mater, but the patient ultimately recovered most satisfactorily.

Mr. Cock thinks he has noticed that in every case of extravasation from rupture of the middle meningeal artery, the pure symptoms of compression are more distinctly and strongly marked than where they are occasioned by depressed bone, or effusion of blood in any other situation:—there is a death-like quietude of the limbs; the face is devoid of expression or muscular motion; the powers of the patient seem concentrated to produce the laborious heavings of the chest; while the lips and cheeks are mechanically puffed out, as the air is expelled from the mouth at each expiration. These signs, together with the deep loud tone of the stertor, are, I think, very characteristic. The pupil, also, on the same side as the extravasation, will generally be found dilated; although this was not the case in the present instance. These peculiarities may probably be attributed to the clot of blood being to a certain degree circumscribed in extent; to its great depth; and the pressure which it consequently exerts on the opposite surface of the brain, which becomes deeply impressed by it; whereas, when blood is effused into the arachnoid cavity, it is generally less in quantity and spreads over a much wider surface, producing more general and less local pressure. When extravasation takes place on the surface or within the substance of the brain, it is accompanied and indeed produced by lesion of the cerebral texture; which lesion is mostly indicated by paralysis, by irritation or spasmodic action affecting some particular part, by derangement of the pupils, or by other symptoms.

Mr. Cock adds:—A case very similar to that which forms the subject of this paper occurred a few years ago in the hospital; and its result gave me great reason to regret that I had not trephined the patient. On making a visit to one of the wards late in the evening, my attention was attracted by the deep stertorous breathing of one of the patients; and, on inquiry, I was informed it was a man who was then under treatment for apoplexy, having been admitted, in a comatose state, that afternoon. The history was briefly this. He had been brought to the surgery in the morning, in a state of syncope, having, as was reported, fainted in the street. Some stimuli were given him, under which he speedily rallied and walked away. In the course of the afternoon he was again brought into the hospital, in a state of complete coma with apoplectic stertor. The usual treatment—bleeding, calomel, &c.—had been practised without relieving his symptoms, and he was evidently in a hopeless state. The details of the case and the general appearance of the patient, induced me to suspect that he might be laboring under extravasation of blood beneath the cranium, the consequence of injury produced by a fall, the result of accident; and not, as had been supposed, the result of cerebral effusion. On examining the head, I discovered a slight bruise on the right temple; and determined to cut down on the bone in that direction, on the speculation of finding a

fracture. However, after exposing the angle of the parietal bone, no trace of fracture was discoverable, and I did not feel justified in proceeding further. He died in the course of a few hours; and, on examination, a minute fracture, hardly discernible on the exterior of the cranium, was found to traverse the lower extremity of the parietal angle. A large clot of blood had accumulated between the dura mater and the skull, poured out from the ruptured meningeal artery. There was no other injury whatever to the contents of the cranium.

Mr. Cock relates another case in which, after a kick from a horse, the frontal bone was fractured immediately above the nasal process, and a portion of brain escaped. There were no unpleasant symptoms for a fortnight, when the lad became comatose, and the wound was dry and unhealthy. This was succeeded by fever, irritability, screaming. On the 20th day he became hemiplegic on the left side. The loss of motion and sensation was complete in the upper extremities. The paralysis of the leg was less decided in character: the mouth was drawn to the right side. There was occasional convulsive twitching of the muscles of the arm and face. At times, he appeared to be laboring under all the symptoms of compression, but at intervals was perfectly sensible. He had been salivated. He was leeches.

Next morning, the convulsive attacks, which had manifested themselves the day before, were renewed with increased violence. The muscular spasm and twitchings of the left arm and left side of the face became incessant and intense: his pulse quick and feeble, but irregular. These symptoms continued, without intermission, for some hours; and in the afternoon, the chances of his recovery seemed hopeless, unless some relief could be obtained.

"As the progress and nature of his symptoms were such as indicated the formation of matter either within the substance of the brain or between the membranes, I determined to make an attempt to discover the seat of mischief, by removing a portion of the frontal bone. With the Hey's saw, I cut through the bone, in two convergent lines carried upwards from the track of the fracture for about the length of an inch, where they met. A triangular piece of the os frontis was thus removed, just on the right side of the median line. The dura mater, which was now exposed, bulged slightly forwards, and was devoid of pulsation: I divided it freely, by a crucial incision. A small quantity of semi-opaque, dirty-looking serous fluid appeared to escape from under the membrane; but its character and quantity could not be very accurately ascertained, as it became mixed with blood from the dura-matral vessels. The surface of the brain, now brought into view, was disorganized and broken up, apparently in that stage of softening and disintegration which precedes the formation of an abscess. I passed a director for a short distance through the pulpy tissue, in hopes of discovering a collection of pus; but failing in this, considered it best to abandon the search, and remain satisfied with having removed any impediment that the bone might have offered to the future escape of the fluid, trusting that Nature would now accomplish the rest. The wound was covered with warm-water dressing. He complained loudly during the operation, which seemed to have the effect of rousing him from his stupor. Shortly after, he again became convulsed; and his left arm, the left side of his face, and chest, continued to be violently agitated for about two hours: he then became tranquil: and had had no relapse when I again saw him, at 11 o'clock the same evening.

By the 24th day, healthy-looking pus was discharged from the opening in the brain. By the 26th day, he could move the left arm and leg freely. Feverishness now came on again. On the 28th day there appeared swelling of the left upper eyelid. It was evident that the eyelid was protruded by a collection of fluid within the orbit, and situated behind the tarsal cartilage, as there was no infiltration into the cellular texture of the lid itself. A free incision was made through the tarsus, which allowed the escape of a quantity of matter similar in character to that which had been evacuated from the opening in the brain. The symptoms of irritation speedily subsided; and the next day, on introducing a probe through the opening, I could distinctly feel a fissure extending across the roof of the orbit, through which the matter had probably found its way from the cavity of the cranium. A fungous cerebri, which formed, was repressed by gentle pressure aided by an occasional touch of caustic, and the patient got quite well."

Both these cases are creditable to Mr. Cock.—*Med. Chirurg. Rev.*, July, 1842.

M. Sedillot on Surgical Instruction.—M. Sedillot,—after having distinguished himself as an energetic and enterprising military surgeon, first in Poland, during the last revolution in that unfortunate country, and subsequently in Algeria,—has been recently appointed the professor of surgery in the hospital at Strassbourg. The following passages are taken from the introductory lecture to his first course.

Unity of Science.—"The various divisions of Science exhibit so many points of mutual contact, or rather they are so intimately and necessarily united together, that it is scarcely possible to study any one apart from the rest; all affording reciprocal explanation and enlightenment.

Mechanical and chemical philosophy serves to initiate the mind in the general laws of nature, and to disclose the operation of the chief external agencies which modify the functions of the living system.

General and descriptive anatomy reveals to the surgeon the unity of the entire organization; the anatomy of the different regions of the body guides his hand; and pathological anatomy directs his judgment amidst the numerous morbid changes of the various tissues and organs. External pathology reveals the wounds and other lesions of outward parts; internal pathology those of the hidden parts; while the study of materia medica and of operative surgery supplies him with the means of relieving or curing them."

Advantages of Early Clinical Study.—M. Sedillot is a zealous advocate for the student attending on hospital practice from the very commencement of his *curriculum*.

"I do not dispute," says he, "the advantage of knowing theoretically the facts which we have to observe; for the mind in this way seizes upon all the experience of former times, and there is certainly some truth in the paradox that 'we see well only those things which we know.' I will even admit, and that willingly, that the rapidity of a student's progress is generally commensurate with the instruction which he has previously acquired.

But this is not the question; to put it forth in these terms is really to solve it. What we wish to know is whether the student, who does not begin his attendance on clinical practice till the third or fourth year of his studies, is likely to be as adroit at the diagnosis and treatment of diseases

as he who has regularly attended to it from his first matriculation. The answer cannot be very doubtful; for the art of observing *ne s'improvise pas*; it needs long and assiduous practice; and if it does not require a previous knowledge of general science, your literary and scientific diplomas sufficiently vouch for your competency to observe the leading phenomena of disease as revealed at the bedside of the sick. The majority of our students prefer, however, to follow the programme laid down by the university, and usually pass the first four examinations before commencing their clinical studies. The result of this practice is, that generally the fifth examination is *très faible*.

During three years of service which I spent as an aggregate of the faculty of Paris, I have repeatedly observed that the students, who may have gone through their early examinations with éclat, scarcely knew how to interrogate a patient, and frequently mistook the most obvious symptoms and indications of a well-marked case. The diploma of doctor is, however, awarded to you upon the *ensemble* of your knowledge, and you are left to acquire subsequently from actual practice the experience in which you may be deficient; but in your efforts to obtain this, you are necessarily exposed to the most cruel errors, and often run the risk of compromising your future peace and your success for life.

I readily admit, that in the short space of four years—the period that is judged sufficient for your medical education—the general study of the various branches of science, which compose the *curriculum*, must take the precedence of that of special facts; for the latter will be the business of your whole after-life. I do not advise you to neglect any of the courses prescribed; but it seems to me that clinical instruction might almost always be blended with their study at the same time. Few students begin their labors early in the morning; and perhaps all of you will admit that, in some way or another, you lose one, if not several hours in the course of every day, which might well be devoted to observation in a hospital. However this may be, you may be assured that this is the only sure manner of acquiring that ready tact which theory can never communicate.

The surgical *coup-d'œil*, which enabled such men as Dessault, Boyer, and Dupuytren, to discriminate from one end of a ward to another the cases of their various patients, belongs, no doubt, in a great measure, to individual aptitude; but still it mainly depends upon the constant study of actual disease. It is only by the union of great personal experience in the observation and treatment of disease, and of due acquaintance with the recorded experience of others, that the student can ever hope to follow in the footsteps of these great men. Never forget that, whatever may be your destiny, you will ever retain the remembrance of those facts and precepts which have been presented, so to speak, to your eyes, and in which you have taken a personal part, while it will require a constant effort to bear in mind such as have been addressed only to the ear. The maxim of Horace applies, in a special manner, to medical studies:—

*Segnius irritant animos demissa per aures,
Quam quæ sunt oculis subjecta fidelibus.*

It is almost unnecessary to dwell upon this subject, as its truth is abundantly testified by the circumstance that your very co-students, in whom you have most confidence, are just those who become *internes* of the hospitals; and this situation, you are aware, can only be obtained after much

diligence and long clinical attendance. An error, into which many of you are apt to fall, is from an over-zeal to observe and take notes of too many cases at the same time. This is not the right way to acquire a practical knowledge of diseases. While taking a general survey of all, let your attention be particularly directed to three or four cases at a time, reading at your leisure upon the diseases in question from such works as the treatises of Sabatier, Boyer, Begin, Roche and Sanson, or of M. Vidal."

Influence of Constitution on Surgical Diseases.—"Persons of the melancholic temperament—which is owing to a predominance of the venous system—are more subject than others to various sanguineous effusions; and one of my colleagues, M. Judas, has published in the *Gazette Medicale* an interesting memoir on sanguineous tumors of the labia, which he has found to be of frequent occurrence in women of this temperament. Swellings of the glands are rather rare in those of a plethoric or of a nervous constitution, but are very common in lymphatic individuals. It has been observed that persons, who are wholly uneducated and whose encephalon is but ill developed, are more than usually liable to be affected with typhus, and to sink from the effects of it. Again, the more consistent and plastic that the blood is, the less tendency there is to reactions of any sort. The Russian soldiers,—in whom hebetude of mind, a strong and gross diet, a cold climate, a native want of cleanliness, render the blood so thick that it adheres tenaciously to the fingers of the operator—are but little subject to fever after the most severe wounds. In the greater number of those, on whom I operated during the Polish campaign of 1831, the pulse was quite normal on the fifth or sixth day after the operation, and their appetite was as good as ever. On the contrary, in men who are much addicted to study, or who are of a highly irritable temperament, the blood is usually thin and not sufficiently viscid."

Every Surgeon has his own Methods.—"You will find it very useful to follow the clinical courses of several surgeons; for every one has his own favorite views and favorite methods of treatment. By taking notes regularly of the practice of each, you will gradually become capable yourselves of judging of their respective merits, and you will acquire an exactitude and a precision of knowledge, that will be most valuable to you through life. It is often very difficult to ascertain the exact relations between the cures obtained and the methods of treatment employed; it is only by an accumulation of results, carefully and cautiously collected, that we can judge of the superiority of one method over another."

Influence of External Circumstances on Wounds.—"In the last expedition to Constantine (in Algeria), I cured a great number of the wounded, in whom immense purulent collections had formed in the lower limbs, by prescribing freely brandy, coffee, fresh meat, &c., and by the use of warm dry applications. Be it remembered that the poor fellows had been lying in the mud for several nights, under a bitter cold atmosphere, and that their rations also had been curtailed in consequence of the deficiency of provisions. (A similar remark was made by Larrey and other surgeons of the French army during the disastrous campaign of 1814 in Germany.) Many a case of purulent affection may be prevented by the timely administration of an emetic, and the use of a nutritious and even a moderately stimulating diet. I wish particularly to guard you against the practice of specializing or localizing diseases too much, and of supposing that, if you treat a wound locally well, you have fulfilled all the indications of enlightened

surgery. Far from it; the good practitioner will never forget to watch the state of the general health, and endeavor to maintain the equilibrium of all the functions of the system."

Familiarity between Students and their Teachers.—"I shall take this opportunity of stating that it will always give me great pleasure to hear the opinions of any of you upon a case where they differ from those which I have formed of it. In this respect I wish to imitate the example set to hospital surgeons by that great master of our art, the late Baron Dupuytren. Although his professional and scientific susceptibility was excessive, he was not above accepting advice from whatever quarter it came. I remember a striking instance of this feature of his character. A patient, who was received into the Hotel Dieu, was found on examination to present the symptoms common to a dislocation of the shoulder and to fracture of the cervix of the humerus. After delivering a most able lecture on the diagnostic symptoms between these two injuries, he confessed that in the present case he was a good deal puzzled, and that he intended to wait a day or two before determining the point. On the morrow he received a long letter from one of the pupils of his clinique, in which the writer not only proved by very satisfactory arguments that the case was in truth one of luxation, but pointed out the best means of reducing it.

Dupuytren read the letter before his class, summoned the patient before him, discussed each argument separately with his youthful opponent, whom he had called to his side, and with his assistance reduced the dislocation amidst the loud plaudits of all the pupils."

Injunction of Kindness towards Patients.—"You are about," says M. Sedillot with equal beauty and justness, "to find yourselves in contact with fellow-creatures afflicted with two of the greatest ills of humanity, pain and distress. They may often seem to you to be susceptible, irritable, and even unjust; but do not forget that they are your brethren in equality, and that the harder their situation is, the more it should command your sympathy and kind respect. Learn to forego the mere claims of science, and do not regard the unfortunates before you as if they were only objects for professional observation. Avoid especially the slightest indiscretion of language; and let the expression of your features, the sound of your voice, and every, even the most trivial, act of your behavior, always testify your entire confidence in the resources of nature, and in the remedial means of art. The unguarded disclosure of danger, or the allusion to possible accidents, has on many occasions produced the most disastrous consequences, and changed a case of promising success to one of rapid and irremediable danger."

Impolicy of explaining too much to Patients.—M. Sedillot condemns the not unfrequent practice of explaining to patients, in the event of an operation being necessary, the relative dangers attending its performance, and those of leaving the disease to itself.

"The surgeon ought not ever to dread the responsibility of his opinions or of his acts, if he obeys the dictates of a conscientious conviction: by acting otherwise, he erroneously supposes that he escapes the consequences of his conduct, and moreover he often greatly compromises his chances of success. By revealing to a patient the chances of recovery and the dangers which necessarily attend an operation, you plunge him into a state of dreadful anxiety, and in truth you leave him only the mockery of a free choice. How is it possible for any uneducated person to judge of a

matter, of which you cannot explain to him even the very simplest elements? In my opinion, the surgeon's duty is, after basing his judgments on science, to perform without hesitation what appears to him to promise the best hopes of success to his patient, who will have much more confidence in his medical attendant, and more cheerful expectation as to the result, than by adopting a contrary practice."—*Med. Chirurg. Rev., from Journal des Con. Med.*

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

An Inquiry into the Results of Puncture of the Head in Cases of Chronic Hydrocephalus.—This is a most elaborate paper, highly creditable to its learned author, and claiming the perusal of all likely to be called on to treat the disease which is the subject of it. It contains a tabular analysis of fifty-six cases of hydrocephalus in which puncture was performed, giving in each case the sex, age, symptoms before puncture, size of the head, number and date of the punctures, quantity of the fluid evacuated, subsequent progress of the case, date of the report, and lastly the authority. The following extracts give a brief summary of the principal results of the inquiry and the conclusions deduced by Dr. West.

The writer has found mention of 63 cases of chronic hydrocephalus in which the cranium was punctured. In two of these cases, however, the puncture was accidental, while in five instances the results were not such as would justify classing the cases either as fortunate or unsuccessful. Fifty-six cases then remain, in 40 of which the patients died, while in 16 they are alleged to have recovered; or, in other words, the proportion of recoveries to deaths was as 1 : 2·5, and as 1 : 3·5 of the total cases. These results, though considerably less favorable than those obtained by Dr. Conquest, still appear at first sight to afford ample justification of the operation; but the particulars contained in the table will, perhaps, in some degree modify such an opinion.

It would have been interesting to have been made acquainted with the circumstances to which the brilliant success of the operation in Dr. Conquest's hands is attributable. But unfortunately, no data are given in 15 out of 19 cases, beyond the mere statement of the number of punctures, and the quantity of fluid removed. The age of the patient, the duration of the disease, the symptoms attending it, the size of the head, and the condition of the intellectual faculties before and after the operation, are not noticed. We are left in perfect ignorance as to the time which elapsed before each patient was reported as cured; and yet, on grounds so slender, an impression has got abroad in this country and elsewhere that paracentesis capitis is a means to which recourse may be had in cases of chronic hydrocephalus, with a well-founded expectation of success.

In 30 of the 40 cases (in which the operation was unsuccessful), the interval which elapsed between the performance of the operation and the patient's death is stated; and it appears that the deaths after the first puncture were as follows:

Deaths.		Average duration of life after the puncture.	
6	within 4 days	53 hours.	
6	" 14 days	6 days 8 hours.	
3	" 1 month	20 days 16 hours.	
9	" 3 months	56 days 10 hours.	

Of the remaining 6, only 1 survived the puncture 6 months; and the average duration of life in each of these was 3 months 4 days 12 hours. In 18 of these patients, the operation was performed more than once; but in no instance did the children survive the last puncture more than 35 days, while the average duration of life was 12 days 22 hours.

The instances, then, in which life was prolonged by the operation appear to be very few, and the cases in which any reasonable prospect of the patient's recovery existed after a week had elapsed from the first performance of the puncture, are still fewer. The table shows that sometimes the puncture was followed by an almost immediate aggravation of the cerebral symptoms, and by death. Usually, however, a degree of apparent improvement followed the puncture, but the fluid soon collected again, and less marked relief followed the second operation. With its repetition the quantity of fluid increased, and while the size of the head continued undiminished, or even grew larger, the body of the patient became emaciated: and death either took place from exhaustion, or cerebral symptoms came on, and life was terminated by coma or convulsions.

If the symptoms observed during life yield little encouragement to resort to the operation, the appearances disclosed after death afford a powerful argument against it. An account is given of a post-mortem examination of 26 cases. In every instance fluid, sometimes in considerable quantity, was contained within the ventricles or in the cavity of the cranium, and the substance of the brain was softened and attenuated. But, in addition to these appearances, there existed in 16 cases, serious organic disease or malformation of the brain itself, though no symptom during life had betrayed the existence of a condition which mechanical interference could only aggravate.—CHARLES WEST, M.D., *British and For. Rev., from Med. Gaz., April 15, 1842.*

Scarlet Fever, from the Medical Report of the Military Asylum, Chelsea, England.—Scarlet fever is frequently a very fatal disease, particularly to children, yet it will be seen, that within the period comprised in this statistical account, out of 139 treated, only one case proved fatal. I consider this fortunate result to be chiefly owing to the prompt medical assistance afforded, and the treatment not being interfered with by the fears and prejudices of parents and relations. How frequently is the call for medical aid deferred until the disease has gained an ascendancy which the most skilful employment of remedies cannot afterwards overcome.

In *scarlatina anginosa* I am convinced that early medical treatment is of the highest importance. I think it right to mention that I have found cold affusion, or sponging with vinegar and water, according to circumstances and the season of the year, very beneficial. I did not find the children much frightened at the cold affusion as employed here, which is in the following manner.

The child, when covered with the scarlet eruption and the skin very hot and dry, is made to sit on a small stool placed in the middle of a large washing-tub, when about a gallon of cold water is quickly poured over him; he is then wiped dry and replaced in bed. This is in most cases followed by sleep, and an abatement of the heat of skin and fever. I have never seen any harm result from this treatment, but it should be employed in the early stage of the disease.

It is useful to have the vapor of boiling vinegar dispersed through the ward or apartment, and for this purpose we use an earthen-ware ap-

paratus of a conical shape, with a lamp, &c., which is easily procured in London.

I have before observed that the œdematous and dropsical affections which occasionally follow scarlet fever during the state of convalescence, more frequently occur after the milder attacks of this disease.

In an account of the scarlet fever which occurred among the children in George Heriot's Hospital, Edinburgh, in the winter of 1832-33, given by Mr. Wood, surgeon of that institution, and published in the Edinburgh Medical and Surgical Journal of January, 1835—he states “that out of 44 patients between the ages of 8 and 14 years, *nine* were afterwards affected with dropsical swellings.” A much greater proportion than has ever occurred here; but he corroborates my observation by stating “that the patients who became affected with dropsical symptoms were not those who had been most severely ill of the primary fever.”

Mr. Wood also says, that of the 44 boys who were affected with scarlet fever, “*five* were supposed to have had it previously—but the information procured on this subject is vague and unsatisfactory.”

I have never seen an instance in this institution of scarlet fever occurring twice in the same individual.

As scarlet fever is highly contagious, it is here an invariable rule not to permit the convalescents to mix with the other children for a month, and not until *all desquamation of the skin* has entirely disappeared. Tepid baths are used occasionally during convalescence, in order to restore the healthy functions of the skin. Great care is also taken that the return to the usual full or animal diet should be gradual.—*Med. Chir. Rev.*, July, 1842.

Influence of Age upon Pleurisy in Children. From a Review of a Thesis by Dr. BARON, Interne of the Hospital of Enfants Malades, Paris.—From considerable experience, M. Baron concludes that pleurisy is much more frequent in children from two to fifteen years, than in the first two years of life. In 3,392 autopsies of children from one to two years old, he found 205 indisputable pleurisies, and 79 pleuritic changes which were probably not inflammatory. In 181 autopsies of children from twelve to fifteen years of age, he found 158 pleurisies and 13 pleuritic alterations. With respect to the comparative frequency of pleurisy at the different epochs comprised between birth and the fifteenth year, it sets in more frequently during the first five days, than during the period included between the fifth day and the first month; it diminishes in frequency after the first month up to the second year; from the second to the third year it is much more frequent than from the third to the fourth, and more especially from the fourth to the fifth. It is still more rare during the following years, chiefly between the thirteenth and fourteenth year.—*Ib.*

On the Treatment of Favus (Porrigo).—The treatment of favus may with advantage be divided into a *local* and a *general* one, in both of which there are several rational indications to be fulfilled.

The *local treatment* presents three indications, viz.:

- 1st. To clear the scalp of all scabs and crusts, and to attend scrupulously to cleanliness.
- 2nd. To remove the hair from the diseased follicle.
- 3rd. To set up a new action on the part affected.

The first indication is readily fulfilled by the application of poultices continued for two or three days, or by means of lotions containing the diluted hydrochloric acid in the proportion of an ounce to the pint of water, after the hair has been cut short. Either of these means will suffice for the object in view, but the poultices are preferable, as they are always most convenient in their application and most speedy in their action. If, however, the crusts be very thick, they may first of all be loosened by the acid lotion, which acts by dissolving out their earthy parts, and then be separated by means of a large, thick, soft bread or linseed-meal poultice, which will effectually clear the scalp. In the course of the treatment, cleanliness must be attended to by washing the head at least once a day with soap and water.

The second indication to be fulfilled in the treatment of favus, is the removal of the hair from the diseased follicle, and unless this be accomplished it will be in vain that we attempt a cure; for, as Rayer has justly observed, this is as essential in the treatment of favus as is the removal of the nail in certain varieties of onychia; and almost every plan of treatment that has been recommended has had this for one of its chief objects.

To effect this purpose a pitch cap or plaster used formerly to be employed, by which means the hairs were forcibly torn up by the roots. Fortunately this horrible barbarity, which was a disgrace to medicine, has now no advocate, although it was the common practice even at the commencement of the present century.

Various corrosive substances have been at different times, by the older writers especially, recommended as depilatories; but it is to the Messrs. Mahon that the credit is due of having first extensively employed milder and not less efficacious means for this purpose. In consequence of the success attending their method, which is attested by Rayer and others, it has been adopted very generally in the French hospitals, the enormous number of 39,719 cases of disease of the scalp, of which a large proportion was favus, having been treated by these gentlemen in the course of one-and-twenty years.

They begin their treatment by cutting the hair at a distance of two inches from the scalp; the scabs are then removed by means of emollient applications and of poultices, and the skin freed from all impurities by means of soap and water. After this has been repeated for several days in succession, an ointment composed of lard and a depilatory powder, the composition of which is kept secret, is rubbed in every second day on the parts that are affected. A fine comb is then passed through the hair on the days on which this preparation is not used, and thus the hair is got rid of gradually and slowly, but without pain. After this plan has been continued for a few weeks, a small quantity of the powder is scattered through the hair, and the combing proceeded with. This is persevered in, according to the severity of the disease, for a longer or a shorter period, and has been found to succeed when every other mode of treatment has failed. It causes no pain, is devoid of danger, and does not prevent the hair from growing, provided the bulbs have not been destroyed. The composition of the ointment and powder is kept a secret, but according to Chevalier, who has analyzed them, they consist of slaked lime partly carbonated, of a little silica, alumina, and oxide of iron (probably impurities in the lime), and of subcarbonate of potass; their activity evidently depending upon the lime and subcarbonate of potass they contain. The chief causes of the

success of this treatment seem to consist in the removal of the hair by gentle means, and by the continued attention to cleanliness which is enjoined, aided, no doubt, by the peculiar action which the salts of potass appear to exert upon the scalp.

For the ointment* of Mahon we may substitute one composed of 3j. of carbonate of potass to 3j. of lard, or else a lotion containing 3ij. to 3iij. of the same salt to 3vj. of water, either of which, if used in the way recommended by Mahon, will be found to act as mild and sure depilatories.

For the fulfilment of the third indication, namely, that of setting up a new action in the affected part, a vast number of topical applications have been recommended by most of the writers on the diseases of the skin; almost every medicinal substance, indeed, whether mineral or vegetable, of any activity whatever, having found an advocate. The very fact, however, of such a variety of formulæ having been propounded for this purpose, shows how imperfectly the treatment of this disease was understood, and how very inefficiently it must have been conducted.

* M. Petel recommends the subjoined ointment and powder:

Soda (of commerce)	60 parts.
Slaked lime	4
Lard	120
Mix together for the ointment.	
Quicklime	120 parts.
Powdered charcoal	8
Mix for the powder.	

THE
NEW ENGLAND QUARTERLY JOURNAL
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Original Communications.

ART. I.—*Statistics of Pulmonary Consumption in the Cities of Boston, New York and Philadelphia, for thirty Years; with Remarks.* By GEO. HAYWARD, M.D.

It is undoubtedly true that more persons die of pulmonary consumption, than of any other disease. It prevails to a greater extent in some countries than in others, being far more frequent in temperate regions, than in those in a very high, and perhaps it may be added, or low latitude. "It has been calculated," says Sir James Clark, "by the late Dr. Young, Dr. Woolcombe, and others, from the best data which the bills of mortality afford, that in Great Britain and Ireland, consumption causes one fourth part of the deaths that occur from disease."

It is not, however, so prevalent, probably, in the United States as in some parts of Europe, though we have not the means of making any exact calculation upon a large scale. But we have a right to infer this from the fact, that the proportion of deaths from consumption to the whole number is not so great in Philadelphia, New York and Boston, as it is in Great Britain and Ireland; and it can hardly be doubted that it abounds more in these cities than in the country generally.

It is well ascertained that this formidable disease was on the increase in Great Britain from the beginning to the middle of the last

century, and that it remained stationary from that time to the year 1837, the period when the calculation was made. This increase was greatest among the middling and upper classes of society; in fact, the lower classes, it was thought, did not suffer more from it than formerly; which was perhaps to be attributed to an improvement in their mode of living. This increase is the more remarkable, as the mortality from other diseases has lessened in a striking degree in the same period of time. In the year 1700, the number of yearly deaths in every 1000 inhabitants in the city of London, from all diseases, was 31, and only 4 of these were from consumption; while in 1821, the number from all diseases was only 19 in a 1000, and $6\frac{1}{5}$ of these were from consumption. From that period to the year 1837, the proportion of deaths from these two sources remained the same.

It is very desirable to ascertain, if possible, if a similar state of things exists in our own country; but unfortunately we have not the means of deciding this with perfect accuracy. Bills of mortality are not universally kept in the United States, and in those places in which they are, they cannot always be relied on with entire confidence. An approximation to the truth, therefore, is all that can be made, and with this view, I have examined with some degree of care the bills of mortality of the cities of Boston, New York and Philadelphia, for thirty years, from 1811 to 1840 inclusive. In the following tables will be found the whole number of deaths for each year from every cause, and also the number from consumption during this period in these cities.

Statement of Deaths in the City of Boston for thirty Years.

Year.	Whole number of Deaths.	From Consumption.
1811	742	221
1812	677	190
1813	786	193
1814	727	153
1815	854	190
1816	904	180
1817	907	231
1818	971	138
1819	1070	175
1820	1103	220

Total for 10 years,	8741	From consumption,	1891
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1821	1420	208
1822	1203	166
1823	1154	184
1824	1297	246
1825	1450	220
1826	1254	231
1827	1022	178
1828	1233	217
1829	1221	203
1830	1125	193

Total for 10 years,	12379	From consumption,	2046
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1831	1424	203
1832	1761	246
1833	1475	240
1834	1554	246
1835	1914	208
1836	1770	233
1837	1843	212
1838	1920	256
1839	1863	222
1840	1972	240

Total for 10 years,	17496	From consumption,	2306
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Statement of Deaths in the City of New York for thirty Years.

Year.	Whole number of Deaths.	From Consumption.
1811	2524	595
1812	2553	669
1813	2299	562
1814	1974	572
1815	2507	618
1816	2739	678
1817	2527	574
1818	3265	591
1819	3176	577
1820	3516	625
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Total for 10 years,	27080	From consumption, 6061
1821	3542	715
1822	3241	624
1823	3444	683
1824	4341	736
1825	5018	843
1826	4973	820
1827	5181	829
1828	5181	906
1829	5094	880
1830	5537	974
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Total for 10 years,	45552	From consumption, 8010
1831	6363	1033
1832	10359	1415
1833	5746	1251
1834	9082	1471
1835	7082	1437
1836	8009	1514
1837	8732	1458
1838	8053	1225
1839	7953	1315
1840	8474	1296
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Total for 10 years,	79853	From consumption, 13415

Statement of Deaths in the City of Philadelphia for thirty Years.

Year.	Whole number of Deaths.	From Consumption.
1811	2249	369
1812	2017	339
1813	2223	216
1814	2041	274
1815	1943	347
1816	2225	434
1817	2107	349
1818	2609	396
1819	2979	459
1820	3189	446

Total for 10 years,	23582	From consumption,	3629
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1821	2161	438
1822	3334	488
1823	4372	536
1824	4284	576
1825	3539	519
1826	3845	587
1827	3659	523
1828	3971	581
1829	4001	638
1830	3948	636

Total for 10 years,	37114	From consumption,	5522
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1831	4939	673
1832	6699	681
1833	4440	650
1834	5073	636
1835	5666	717
1836	5357	755
1837	5202	748
1838	5462	725
1839	5113	708
1840	4949	777

Total for 10 years,	52900	From consumption,	7070
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The most striking fact brought to light by these tables, is the great decrease of deaths by consumption in these cities. This decrease has been great in all, but greater in Boston than in either of the others; and this is not only a relative, but an absolute decrease, for the mortality has been somewhat more during the last ten years than it was thirty years ago. At that time the deaths were about 22 to every 1000 inhabitants; and now they are nearly, if not quite, 23 to 1000. It will be seen by these tables, that in Boston during the first ten years, the whole number of deaths was

	8741	By consumption, 1896	being 1 in 4.622
Whole No. 2d 10 yrs.	12379	" 2046	" 1 in 6.050
" 3d "	17406	" 2396	" 1 in 7.587
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" for 30 yrs.	38616	" 6243	which is equal
to 1 death by consumption in 6.185 of the whole number.			

In New York,

Whole No. 1st 10 yrs.	27,080	By consumption, 6061	being 1 in 4.451
" 2d "	45,552	" 8010	" 1 in 5.686
" 3d "	79,853	" 13415	" 1 in 5.952
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" for 30 yrs.	152,480	" 27486	" 1 in 5.547

In Philadelphia,

Whole No. 1st 10 yrs.	23,582	By consumption, 3629	being 1 in 6.498
" 2d "	37,114	" 5522	" 1 in 6.721
" 3d "	52,900	" 7070	" 1 in 7.482
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" for 30 yrs.	113,596	" 16221	" 1 in 7.003

Thus it appears, that during the whole period embraced in these tables, Philadelphia has suffered less from consumption than either of the other cities; the average number of deaths from that disease for the whole time being as 1 in 7.003 of the whole number; while in Boston they were as 1 in 6.185; and in New York as 1 in 5.547. But during the last ten years, Boston has enjoyed the greatest exemption. From 1831 to 1840 inclusive, the deaths in Boston from consumption were only 1 in 7.587, in Philadelphia 1 in 7.482, and in New York 1 in 5.952.

It is supposed by some persons that there has not been an actual decrease of consumption during the last thirty years, or at any rate, not so great an one as at first view there may seem to have been; and they explain the fact, that a less number of deaths is reported from this disease, from an improvement in diagnosis which has taken

place, by means of which the precise nature of the malady which causes death is more accurately ascertained. But if this were true, it would not explain the comparative improvement that has occurred in Boston in regard to consumption; for it cannot be pretended that the physical signs, by means of which we are guided in determining the nature of some diseases, especially those of the chest, are not as well understood by the physicians of New York and Philadelphia as by those of this city. Besides, there has been no diminution of deaths from this disease in London for the last fifty years, and no one can question the skill in diagnosis of the medical men of the British metropolis.

I believe, however, on the contrary, so far as Boston is concerned, for I have not examined sufficiently with this view the tables of the other cities to speak with confidence, that this improvement in diagnosis has had an opposite effect. Many cases which terminate fatally and are now known to be consumption, were formerly not well understood, and were included among the deaths from "Unknown Diseases," "Decay of Nature," "Debility," "Indigestion," &c. On the other hand it cannot be denied, that some few probably occur, which would formerly have been reported as consumption, that are now ascertained to be some other affection; but these I am satisfied do not balance the other class of which I have just spoken.

It is well known that the practice of examining the chest by means of auscultation and percussion was not general, and the use of the physical signs as a means of detecting disease was not employed to any extent in this country, before the year 1830; yet the decrease of consumption began before that time.

It will be seen, by examining the bills of mortality of the city of Boston, that there has been a very striking and uniform improvement as to pulmonary consumption since the year 1811. By the United States census of 1810, Boston contained 33,250 inhabitants; in 1820, 43,298; in 1830, 61,392; and in 1840, 93,452. In 1811, when the population had not probably increased at all from the preceding year, as it was a period of great depression in commercial affairs, the whole number of deaths was 742, of which 221 were of consumption; while in 1840, with a population nearly three times as great, and with nearly three times as many deaths, there were only 19 more fatal cases of consumption, the whole number being but 240; not quite 1 in 8 of all the deaths, and not 3 in 1000 inhabitants.

Another reason, and one to which I have already alluded, against the opinion that the decrease of deaths from consumption in the bills of mortality of Boston is owing to the improvement in diagnosis, is the fact, that since this improvement has taken place, there is a great falling off in the deaths from "unknown diseases;" many cases in former years that were included under this head are probably now classed under that of consumption, as their precise nature is more accurately ascertained. From 1821 to 1830 inclusive, the whole number of deaths was 12,379, and of these 1917 were from unknown diseases; while from 1831 to 1840 inclusive, the whole number was 17,496, and from unknown diseases only 1337; that is, that with an increase of nearly one third in the number of deaths, there was a decrease of nearly one third from unknown diseases.

It must be evident then, I think, to any one who will examine the subject, that it is impossible to explain the great diminution in the number of deaths by consumption, as reported in the bills of mortality of the city of Boston, without admitting that there is an actual decrease of that disease. To what this decrease may be owing, it is not perhaps easy to determine. It is probably, however, to be referred to a combination of causes, rather than to any single one. These I should say were mainly the great improvements that have taken place in living during the last thirty years; to the increased comforts of life, which are now enjoyed by every class of the community. People are better fed, better clothed, live in more comfortable houses, indulge less in excesses of all kinds, and pay more attention to personal cleanliness, than they formerly did. They adopt better and more effectual means to protect themselves from the vicissitudes of temperature, and the low rate at which cotton fabrics can be obtained, and the consequent general use of them, have no doubt contributed essentially to this desirable result.

It is well known that a cold, moist and variable climate acts not only as a predisposing, but as an exciting cause also of consumption; and unless the system is protected by proper food and suitable clothing by day and by night, many of the inhabitants of such a climate will fall victims to pulmonary disease. There is no greater error, I believe, than to suppose that the body can be hardened by exposure to the atmospheric changes without suitable precaution. It would be as reasonable to imagine that it could acquire the power of resisting any degree of heat or any of the powerful chemical agents,

as that it could without proper protection withstand the influence of the elements.

Our only hope of lessening the mortality from consumption, is by using all possible means of prevention; for it is not pretended by those whose opinion is of any value, that this disease in a confirmed state is within the control of remedies. It behooves us then to ascertain, if we can, what these means are, and to use them with diligence.

Boston, October, 1842.

ART. II.—*Cases of Tracheotomy.*

THE following cases, read before the New Hampshire Medical Society by Dr. Twitchell, of Keene, were put into our hands by a gentleman who had obtained the permission of the author to publish them, with the request that we would insert them in our Journal.

EDS.

In the great variety of operations which the surgeon is called upon to perform, perhaps there is no one more appalling to spectators, or which requires more decision and presence of mind in the operator, than that of bronchotomy or tracheotomy. And when performed for the removal of a foreign substance from the larynx or trachea, there is no case in which the patient receives more immediate and manifest relief, and in which the skill and dexterity of the surgeon is more duly appreciated. Yet the operation itself, if properly performed, is not a dangerous one.

CASE I.—August 5th, 1827, was called to visit a child aged 22 months, and found her with symptoms of suffocation. The report given by her parents was, that about two hours before, she had been playing with some common field beans, had put some of them into her mouth, and in the act of laughing, they supposed one of the beans had slipped into the windpipe. She was immediately seized with a difficulty of breathing, with occasional paroxysms of suffocation. Upon attentive examination, and listening to the manner of her breathing, I came to the conclusion that the bean was in the trachea, near its bifurcation, and probably lodged on or over the left bronchial tube, as the lungs on that side of the chest did not expand in respiration.

The necessity of an operation was manifest, and was proposed as the only means of rescuing the child from immediate danger. Her parents would not consent to it, and as the foreign substance appeared to be fixed or stationary in the situation it then was in, it was thought not proper to urge it at that time. The attendants were directed to watch the child attentively, and if the bean appeared to come up into the upper part of the trachea or larynx, and strangle her, to endeavor to force it back again by rubbing or pressing the throat with considerable force.

I then left the patient and was absent two or three hours. Upon my return, I was met at the door by some one saying, "the child was dying." I found her with a livid countenance, tossing herself about in various directions, and gasping for breath. By pressing and rubbing the larynx and trachea, the bean appeared to descend again to its former situation. An operation was no longer objected to, as it was evident she must have immediate relief, or death would be the consequence.

Preparations were soon made. The child was placed upon a table on her back, with a roll of cotton under her neck, and her head bent backward over it, so as to stretch the integuments on the fore part of the neck, which was very short and fleshy. An incision was made through the skin and cellular substance, extending from near the thyroid cartilage to the sternum, continuing the dissection on the fore part of the trachea. Some small bloodvessels were divided, but the hemorrhage was not so profuse as to delay the operation. The thymus gland, apparently very large, was next observed extending up the trachea till it came in contact with the thyroid gland. It was carefully detached, and the assistants, with some difficulty, succeeded, with small blunt hooks, in holding the two glands asunder sufficiently to denude the trachea, through which an incision was then made nearly half an inch in length. The air came hissing through the wound. A pair of small forceps were passed into the trachea and up through the glottis, by which it was ascertained that the foreign substance was not above the opening. Then a pair of common dressing forceps were introduced and the blades separated so as to hold apart the sides of the slit. They were but just placed in that situation, when the bean, during some little struggle of the child, came up, and was instantly seized with the forceps and removed. The patient was turned face downwards to prevent the blood from getting into the trachea. She immediately breathed easy and natural. The glands

and integuments closed over the slit so that no air escaped through it, and within five minutes she was sleeping. After letting her rest for a short time, the wound was sponged clean and accurately brought together and retained by strips of adhesive plaster; a small compress placed upon each side, and secured by a roller passed several times round the neck. She was then put to bed and rested quietly through the night. The next day, August 6, when I visited the child, found her running about the house, apparently well.

August 8th.—Removed the dressings for the first time. The wound had completely adhered by the first intention, and there had been no febrile action after the operation.

August 12th.—The dressings were discontinued, and the child was in perfect health.

CASE II.—March 1st, 1830. A child aged one year and sixteen days, laboring under a slight catarrhal affection or influenza, while creeping upon the floor, put a piece of broken earthen cup into the mouth, and in the act of coughing or laughing, as stated by the parents, it slipped into the throat, and produced, in their language, “a choking, or an inability to swallow and a difficulty of breathing.” Within half an hour after the accident, I saw the child; his breathing was somewhat hoarse and hissing, but his friends said, “not much more so than before the accident happened.” He could not be induced to swallow any thing, but when a little water was put into his mouth, after holding it a short time, he ejected it. A probang was passed into the œsophagus, after which he swallowed readily, and the breathing was less impeded. Some castor oil was administered, and mucilaginous drinks directed.

March 2.—Nine o’clock, A. M., eighteen hours after the accident, the father of the child came running to me and said he was suffocating, or, to use his expression, “was choking to death.” When I arrived they had the child in their arms carrying it about the room in nearly an erect posture. He was restless, tossing his arms and endeavoring frequently to change his position. His countenance was livid, his breathing very much impeded, and sounded hissing and husky, and was only in gasps. It was evident that the foreign substance was in the larynx or trachea, and that he must be relieved immediately by an operation, or death would ensue. Preparations were quickly made, and with the assistance of Dr. J. B. Dausman, I proceeded in the operation. The child was placed upon a table on his back, a small pillow rolled hard and placed transversely under

his neck, and his head bent back over it so as to elevate his chin and make the integuments tense, and the cartilages of the larynx and trachea prominent.

An incision two inches in length was made through the integument. The thyroid and guttural veins were seen, very turgid. They were carefully detached sufficiently to be pushed aside, and were not divided. Continuing the dissection on the fore part of the trachea, an artery, the thyroidea anastomotica, was divided. At first it bled very freely, so that we were obliged to suspend the operation a few minutes. The bleeding soon ceased; an incision was then made through the trachea, half an inch in length. The air came freely through the wound, and the child breathed with more ease. After delaying a short time, that he might in some measure recover from his exhausted and suffocated state, a small pair of forceps were passed through the slit in the trachea upwards towards the glottis. It immediately came in contact with the piece of earthen, the sound of which was distinctly heard by the bystanders. Every attempt to seize it with the forceps proved ineffectual. A probe was then curved and passed into the trachea, and endeavors made to dislodge it, but did not succeed—during which the child struggled much, and at length became so much exhausted that the spectators thought him about expiring. A large probe was then introduced, and with it the foreign substance was pushed up through the glottis into the pharynx, and the child swallowed it. Afterwards a bougie was passed up through the larynx and glottis, with which it was ascertained that all obstruction was removed.

In the various attempts made to dislodge this substance, it was pretty well ascertained that it was sharp and angular, and being so firmly fixed that it required considerable force to push it into the pharynx. The probability was that the delicate and sensible membrane lining the larynx and upper part of the trachea was very much lacerated and wounded. Under these circumstances it was thought advisable not to close the wound, that respiration might go on by the air passing through the slit in the trachea, in case that the subsequent inflammation should be so great as to close the glottis and prevent it passing that way. Some superficial dressings were applied, but a portion of the incision was left open and naked. The child was then put into bed, and although very much exhausted, his respiration was tolerably free and easy. In the evening he was very quiet—had slept some, and had taken some light nourishment. The air had occasionally passed through the wound.

March 3d.—There was considerable febrile action—the breathing was rather more laborious—some portion of the air passed through the incision at almost every breath. A cathartic of castor oil was administered. In the evening the oil had purged two or three times, and he was resting quietly, breathing as in the morning.

March 4th.—The external parts appeared considerably swollen and inflamed. In respiration, the air passed wholly through the incision in the trachea. The glottis was apparently closed by the inflammation, and he could make no vocal sound. Six grains of calomel was to be given, followed with castor oil to purge freely.

March 5th.—The cathartic had operated several times, but the symptoms continued much as they were on the 4th.

March 6.—Suppuration had commenced in the wound, and he breathed at intervals rather laboriously. The air continued to pass wholly through the opening in the trachea. He could neither cry aloud nor make any noise.

March 7th.—Suppuration was copious—he coughed a good deal, and when coughing, some air was forced through the glottis, carrying with it pus and mucus.

March 8th, 9th.—He appeared to be failing—took but little nourishment. Suppuration continued very copious—pus very thick and glutinous, and when any of it was carried with the air through the wound in the trachea, it produced violent fits of coughing and strangulation. At intervals, that is, after he had expelled a good deal of pus and mucus during a paroxysm of coughing, he breathed more freely, and mostly through the glottis—could cry aloud and articulate some words.

March 10th.—His breathing was more laborious, with apparent inability to cough and expectorate. Granulations had sprung up in the wound, and appeared to impede the passage of the air, and either from inability or disinclination he had ceased taking any nourishment, and his mouth and jaws were covered with aphthæ, for which a gargle of borax and honey was prescribed.

March 11th.—In the morning a messenger came in great haste and said “the child was suffocating.” I found him breathing very laboriously and croupy. Countenance livid, with the expression of great anxiety—unable to make any sound. Granulations had nearly filled up the wound. The incision in the throat was mostly covered by them, and the trachea itself in that part appeared very much contracted, which was ascertained by passing a probe through the

opening ; but very little air appeared to pass into the lungs any way. In this situation we concluded the indication was, if possible, to dilate the stricture of the trachea, and to clear it of the tenacious, muco-purulent secretion with which it appeared to be filled. With that view I passed a pretty large sized urethra bougie into the trachea, and first passed it up through the glottis, and afterwards passed it downwards towards the lungs. It produced considerable coughing, and a good deal of mucus and pus was discharged into the mouth, and either ejected or swallowed, and some came through the wound. This appeared to give immediate relief—it restored his voice and he breathed with much more ease. A decoction of seneca and squills, prepared after the formula for Coxe's Hive Syrup, was directed to be given in doses of a teaspoonful every half hour, till it produced vomiting, and the gargle of borax and honey to be continued. In the evening the child had vomited several times, and had two or three alvine discharges—breathed more freely and took some nourishment.

March 12th.—Much improved—respiration was natural and easy, but little air escaped through the wound, and that only when he coughed, cried, or was agitated. He took sufficient food, and the aphthous appearance of the mouth was principally removed.

March 14th.—He had gained rapidly. He was sitting up in bed, diverting himself with play things, and breathed perfectly natural.

March 10th. He had continued to improve. The opening in the trachea was closed, the wound filled up and nearly cicatrized. Discontinued my visits.

April 4th.—Called to see my patient—found him in perfect health. The cicatrization of the wound had been complete for several days.

CASE III.—March 30th, 1830. Was called to visit S. W., aged four years and four months. Met in consultation with Drs. Carpenter, E. Hatch, and Bliss, at 8 o'clock, A. M. The report given by the parents of the child was, that the evening before, she was amusing herself with some large kidney-shaped garden beans. She had some of them in her mouth, and by some means one of them slipped into the windpipe. She was immediately seized with a difficulty of breathing which had continued ever since, with occasional violent suffocating attacks. At the time of our consultation the breathing was hissing and husky, and by auscultation we found that the right bronchial tube was obstructed, and concluded that the bean was lodged near the bifurcation of the trachea. An operation was immediately determined upon as the only means of affording the relief the case so urgently required.

Preparations were soon made, and the child placed upon a table as in the preceding cases. An incision was made through the integuments two inches in length. The dissection was continued till the fore part of the trachea was laid bare. No bloodvessel of importance was divided, and there was no hemorrhage to impede the operation. A longitudinal incision was then made into the trachea, rather more than half an inch in length. The air passed freely through the wound. The bean soon made its appearance, presenting its broad or flat side to the slit in the trachea, the sides of which would not separate sufficiently to let it pass. Endeavoring to seize it with a pair of forceps, it slipped from my grasp, was forced up, and stuck fast in the larynx or glottis, which it so completely filled, that it prevented any air passing that way. An attempt was made with a large probe to force the bean up through the glottis; but it was so large it would not pass without too much violence. The child at that time struggled considerably, and the assistants who held apart the sides of the incision, lost their hold. The integuments of the neck, which was very fleshy, immediately closed over the opening in the trachea, and stopped respiration entirely. The lungs collapsed, the child straightened herself, her countenance became livid, her eyes motionless and glassy. The spectators declared she was dead. The sides of the incision were instantly separated and held asunder by the assistants, and the blades of a pair of dressing forceps were introduced into the slit in the trachea, and with them the sides were kept apart, but no air passed—respiration did not return—the child was still motionless. I called for a tube or some instrument to inflate the lungs, but the agonized feelings of the friends and the agitation of the attendants and spectators prevented their heeding my call, or rendering any assistance. I then seized a bougie which was at hand, passed it through the wound into the trachea downwards towards the lungs, at the same time directed an assistant to press the chest in different directions with his hands. The bougie appeared to irritate and produce some little motion in the chest, and upon removing it some little air appeared to rush into the lungs. The motion of the chest increased, respiration was gradually restored, and life and action returned. She swallowed a few drops of camphorated spirit. I then passed a pair of small forceps up towards the glottis, seized the bean and removed it.

She immediately breathed free and easy. As soon as she had recovered a little from her exhaustion, the wound was sponged clean

and dressed with strips of adhesive plaster, and she was put to bed, and was soon asleep.

The next day, March 31st, 1 o'clock, P. M., there was considerable febrile excitement, with croupy breathing. A cathartic of calomel and jalap was given, and followed by sulphate of magnesia, which purged freely and gave relief. A solution of tartarized antimony was directed to be given occasionally till the febrile symptoms were removed.

April 2d.—The wound was dressed, and very little air escaped through the incision. It had principally adhered by the first intention.

April 7th.—The incision was entirely healed, and the child in perfect health.

ART. III.—*The Influence of Temperature upon Mortality.* By
CHARLES E. WARE, M.D.

THE following statistics were drawn up some years since for the purpose of seeing if there was any correspondence between the average temperature of different years, or the different seasons of different years, and the mortality of the same years. They were laid aside with the idea that at some future time they might be extended and made more complete. But as neither the time nor the opportunity have as yet offered, they are now presented, in their present condition, for the examination of those who are interested in such inquiries.

The tables were made out from the records of mortality kept in the city of Boston. It was at first intended, besides making out general tables, also to have made out some with reference to particular diseases. But upon examination it was found that it would be impossible to do this with any degree of satisfaction. The city records are kept in so loose a manner in this respect, and the titles there given are so uncertainly indicative of the true character of the disease, that results obtained from them could make no pretensions to accuracy, and would in consequence be of little value, not worth the time spent in obtaining them. Notwithstanding these objections, however, tables were made out, not with reference to particular diseases, but with reference to the general character of diseases during the warmer and colder months, viz. with reference to the prevalence of thoracic or abdominal diseases at these seasons. With

this object in view, these tables were confined to children under two years of age, because within this period children are particularly subject to the influence of teething upon disease, and we have an opportunity of observing a period when one great source of mortality is most distinctly in operation; and also, because under two years the age of the patient is given almost without exception in months, thus enabling us to feel more certain of the accuracy of the records. This last circumstance is in a measure true of the deaths at a more advanced age, as 4 or 5; but as we advance, the exceptions become more frequent, and the records in proportion uncertain. The table including the whole number of deaths in the city, is made out from the city bills of mortality.

The population of the city from 1830 to 1835, increased more than one quarter. From 1832 to 1837, it probably did not increase less. Of course it was necessary to make an allowance for this. In order to get at the population of those years intervening between the years in which the census was taken, it was necessary to calculate from the census, supposing the increase of each year to be in the same proportion; it could only be then an approximation. It was found that it would be more convenient and more exact, in contrasting the tables, if the population of each year was raised to 80,000, the population of the last year, increasing the mortality of each year in the same proportion. This was done by obtaining a common multiplier for each year. The tables therefore give the representative, not the actual mortality of the city.

The table giving the average temperature, was made out from records kept by Dr. Hale, of this city, according to Fahrenheit's scale.

The number of Deaths in each Month of those under 2 years.							The Whole number of Deaths in the City.						
	1832.	1833.	1834.	1835.	1836.	Total.		1832.	1833.	1834.	1835.	1836.	Total.
Jan.	44	33	42	39	47	205	Jan.	186	133	157	119	163	758
Feb.	35	36	40	35	25	171	Feb.	138	135	127	122	128	650
Mar.	46	32	33	35	38	184	Mar.	173	120	124	126	141	684
Apr.	45	36	30	35	21	167	Apr.	200	135	125	114	113	687
May	54	19	27	20	29	149	May	200	106	114	113	97	630
June	30	23	26	23	27	129	June	167	101	110	105	136	619
July	30	36	37	25	30	158	July	146	116	121	124	115	622
Aug.	16	75	64	90	80	325	Aug.	131	178	160	228	164	861
Sept.	60	98	90	94	127	469	Sept.	189	212	183	229	196	1009
Oct.	65	51	51	80	70	317	Oct.	226	146	151	226	201	950
Nov.	50	34	35	80	46	245	Nov.	198	147	153	251	148	897
Dec.	68	42	35	61	38	244	Dec.	177	154	154	192	168	845
Total.	545	515	510	617	578	2765	Total.	2143	1693	1678	1949	1770	9233

The first table presents the number of deaths of children under two years of age. In this the greatest number of deaths is found to occur each year in September, with one exception, viz. 1832, when there were 8 more deaths in December, and 5 more in October than in September. The whole number of deaths in September for the 5 years, is 469. The smallest number of deaths in any month for the 5 years, is in June, viz. 129. The difference between this and September is 340. From September the number of deaths decreases almost regularly as we proceed through October and November till we arrive at June. The only deviation from the regular decrease between September and June is in March, when there were 13 more deaths than in February. This irregularity may be accidental, since in 1833 and 1834 the number of deaths is less than in February, and in 1835 it is the same. In July there is a small increase in the number of deaths over June, viz. 29. In August there is a great increase, the difference between July and August being 160.

The second table presents the whole number of deaths in the city. Here the average for the 5 years is found to correspond almost exactly with the average of those under 2 years. But with regard to the mortality in particular years there is a considerable difference. For instance, in the years 1835 and 1836, the table of the whole mortality gives an extraordinary increase in the number of deaths in 1835, while in 1836 it is not greater than usual. Among those under 2 years, there is not more than the ordinary mortality in 1835, while there is a very great mortality in 1836. It is however to be considered, that a considerable proportion of those dying over 2 years of age would properly come under the diseases of childhood, and would be more or less subject to the influence of those causes which are especially productive of disease at that period of life. No contrasts, therefore, between these tables in this regard can be very accurate.

Although the course of mortality through the year is thus uniform in the sum of the 5 years, there is no single year of the 5, which taken by itself, will present the same uniformity. In some years there is a very great deviation. In the years 1832 and 1836, according to the table of the whole mortality, there was a greater mortality in October than in September. And in each of these years there was a less mortality in July than in June. In 1832 there was a greater mortality in April and May than in January, February or March.

The number of deaths in each month of those under 2 years.							The average Temperature of the 5 years, 1832, '33, '34, '35, '36.						
	1832.	1833.	1834.	1835.	1836.	Total.	1832.	1833.	1834.	1835.	1836.	Total.	Range.
Jan.	44	33	42	39	47	205	26.6	30.6	23.6	25.7	25.7	26.5	7
Feb.	35	36	40	35	25	171	26.3	24.6	32.5	24.01	30.3	27.6	8
Ma.	46	32	33	35	38	184	35.3	31.3	36.4	29.3	30.3	32.4	6
Apr.	45	36	30	35	21	167	39.6	46.4	45.2	40.6	43.09	43.01	7
May	54	19	27	20	29	149	51.2	57.3	51.5	53.7	52.9	53.3	6
Jun.	30	23	26	23	27	129	63.03	61.6	63.3	63.8	58.4	62.5	5
July	30	36	37	25	30	158	66.5	70.1	73.8	71.3	68.6	70.4	7
Au.	16	75	64	90	80	325	70.3	66.7	67.3	67.4	65.1	67.4	5
Sep.	60	98	90	94	127	469	60.6	60.8	62.03	57.7	60.1	60.3	5
Oct.	65	51	51	80	70	317	51.3	50.1	48.	52.4	44.2	49.2	8
Nov.	50	34	35	80	46	245	40.4	37.4	38.2	39.6	35.6	38.3	5
Dec.	68	42	35	61	38	244	30.3	31.1	27.1	21.8	28.2	27.6	10
Tot.	545	515	510	617	578	2765	46.8	47.2	47.3	43.1	45.2		

Comparison of one year with another.—If we compare the number of deaths in each year of those under 2 years of age, with the temperature of each year, we find some apparent correspondence between the greater number of deaths and the greater degree of cold. The year 1835 was the coldest, colder by 2 degrees than 1836. The number of deaths was 39 greater. 1836 was 1 degree colder than 1833. The number of deaths was 33 greater. 1832 was 1 degree colder than 1833 and 1834. The mortality was 30 greater than the one, and 35 greater than the other.

The whole number of Deaths in the City for each Month—beginning Jan.							The average monthly Temperature of the 5 years, 1832, '33, '34, '35, '36,—beginning January.						
1832.	1833.	1834.	1835.	1836.	Total.		1832.	1833.	1834.	1835.	1836.	Total.	Range.
186	133	157	119	163	758		26.6	30.6	23.6	25.7	25.7	26.5	7
138	135	127	122	128	650		26.3	24.6	32.5	24.01	30.3	27.6	8
173	120	124	126	141	684		35.3	31.3	36.4	29.3	30.3	32.4	6
200	135	125	114	113	687		39.6	46.4	45.2	40.6	43.09	43.01	7
200	106	114	113	97	630		51.2	57.3	51.5	53.7	52.9	53.3	6
167	101	110	105	136	619		63.03	61.6	63.3	63.8	58.4	62.5	5
146	116	121	124	115	622		66.5	70.1	73.8	71.3	68.6	70.4	7
131	178	160	228	164	861		70.3	66.7	67.3	67.4	65.1	67.4	5
189	212	183	229	196	1009		60.6	60.8	62.03	57.7	60.1	60.3	5
226	146	151	226	201	950		51.3	50.1	48.	52.4	44.2	49.2	8
198	147	153	251	148	897		40.4	37.4	38.2	39.6	35.6	38.3	5
177	154	154	192	168	845		30.3	31.1	27.1	21.8	28.2	27.6	10
2143	1693	1678	1949	1770	9233		46.8	47.2	47.3	43.1	45.2		

In examining the table of the whole mortality we find a similar correspondence, with the exception of the year 1832, in which, although warmer than 1835 or 1836, and colder than 1833 or 1834,

the mortality was very much greater than in either. The mortality of each month of 1832, except the last 5, was greater than the same month of either of the other years. There is nothing corresponding to this in the average temperature. It neither indicates the extremes of heat nor cold.

In 1835, the number of deaths in the last 5 months of the year was very much greater than in any other year. There does not seem to be any correspondence between this and the temperature. Some months were warmer and some colder than usual, and the average range was not greater than in other years. In children under 2 years, the increased number of deaths was owing to diseases within the chest. This season the measles prevailed. The number of deaths from them was 188; whereas in the year following it was only 31, and in the year previous only 1. The mortality from them commenced in July, and became very considerable in August. It was in July that the excessive mortality of this year commenced. The deaths from measles continued through this year and the early part of the following, when most of the cases which are reported in 1836 occurred.

The mortality from abdominal diseases during the summer months of 1835, among children under two years, was not greater than usual, and was much less than the year following, while the mortality from thoracic diseases in these months was very much greater than usual. In this year there were 141 deaths from lung fever; in the year before, only 65; in the year following, 81. The probability is that the increased number of deaths from lung fever may be ascribed to the measles, since a large proportion of those who are reported as dying of measles, die of pneumonia, supervening upon measles. Many also would be reported as dying of lung fever, although measles was the original disease. If we strike out the deaths from measles, from this year and the following, we find the mortality of this year was only 22 the greatest. In 1832 both the measles and scarlet fever prevailed. There were 70 deaths from measles, and 149 from scarlet fever. I have examined the city records as far back as 1813, and during that interval the greatest number of deaths from scarlet fever in any one year previous to 1831, was in 1820, viz. 9. In 1831 there were 58 deaths. Between 1831 and 1837, the smallest number of deaths from scarlet fever was in 1836, viz. 16. These are important circumstances to be noticed, particularly the periodical occurrence of measles. Its regular appearance, or perhaps rather severity, every

few years, and its comparative absence or mildness during the interval, almost precludes the possibility of its having any thing to do with the temperature. The following is the mortality from measles from 1813 to 1837.

1813. '14. '15. '16. '17. '18. '19. '20. '21. '22. '23. '24. '25. '26. '27. '28. '29. '30. '31. '32. '33. '34. '35. '36.
0| 0| 21| 6| 0| 1| 0| 0| 149| 3| 0| 2| 77| 10| 0| 0| 72| 13| 2| 70| 2| 1| 188| 31

With scarlet fever it is somewhat different. Since 1831 it has been prevalent. And it seems, during the 5 years which we are considering, as if it had been resident among us as one of our common diseases, and as if it might have been subject during that period to the same causes which influence the mortality from other diseases. If it were necessary to make an allowance for these diseases, it would be difficult, indeed impossible, to do it in such a way as to give exactness. We might strike out the actual mortality from each of these diseases, but we could not strike out the mortality from other diseases having their origin in or being in some way dependent upon these. If we strike out the deaths from measles and scarlet fever from 1832, the mortality of that year will still be greater than any other year, provided we make the same deduction from them also.

Table of the Mortality and average Temperature of July, Aug., Sept.				Table of the Mortality and average Temperature of Jan., Feb., March.			
	Whole.	Under 2.	Temp.		Whole.	Under 2.	Temp.
1832	466	106	65.8	1832	497	125	29.4
1833	506	209	65.9	1833	388	101	28.8
1834	464	191	67.8	1834	408	115	30.7
1835	581	209	65.5	1835	367	109	26.3
1836	475	237	64.6	1836	432	110	28.7

Comparison of Seasons.—The above tables present the mortality for the 3 summer months, July, August and September, and for the 3 winter months, January, February and March. In the summer months we find the greatest number of deaths among the whole population to have occurred in 1835, which was 1 degree warmer than 1836. The difference in the mortality of these 2 years was 106. The least mortality was in 1834. This year was nearly 2 degrees warmer than any other. The mortality was 117 less than in 1835.

Among those under 2 years, the greatest mortality was in 1836, the coldest year. In 1833 and 1835 the mortality was equal, 28 less than in 1836. These years were 1 degree warmer than 1836. In 1834 the mortality was 18 less than in 1833 and 1835. The temperature was nearly 2 degrees warmer. In 1832 the mortality was

85 less than in 1834, the temperature was 2 degrees warmer, and was within a fraction of a degree the same as in 1833 and 1835. In 1836 the great mortality was owing to the diseases in the abdomen. In 1833 it was the same. In 1835 it was owing to both abdominal and thoracic diseases.

In the winter months, January, February, and March, we find the greatest mortality was in 1832. It was the least in 1835. The difference is 130. The average temperature was 3 degrees lower in 1835 than in 1832. In 1834 the mortality was 89 less than in 1832. The average temperature was 1 degree higher. In 1833 and 1836 the mortality was in the one 109, in the other 65, less than in 1832. The temperature of these 2 years was within a fraction of a degree the same, and in both 1 degree lower than in 1832. Among those under 2 years, the greater mortality was in 1832 and 1834; these were the two warmest seasons. The least mortality was in 1833. The average temperature of this season was 2 degrees higher than in 1835, in which the mortality was 9 more. According to these tables the correspondence between the mortality and the temperature does not seem to be very striking. In the summer seasons, so far as there is any correspondence, the least mortality is in the warmest seasons. In the winter months there is a still less apparent correspondence, but such as it is, it would give the least mortality to the colder seasons.

A Comparison of Single Months.—The whole mortality. In 5 out of the 12 months, the greatest mortality occurs in that year in which the month was the coldest. In only one case does it occur in that year in which the month was the warmest. In two months the least mortality was in the warmest year. In one month it was in the coldest year.

The Mortality under 2.—In 2 out of the 12 months the greatest mortality occurs in the coldest year. In 3, in the warmest year.

In 4 months the least mortality was in that year in which the month was the warmest. In no month was the least mortality in that year in which the month was the coldest.

Striking Months.—If we examine September in the table of the whole mortality for the 5 years, we find that in 1835 the number of deaths was the greatest, and that in 1835 the average temperature was the lowest. That in 1834 the number of deaths was the smallest, and that in 1834 the average temperature was the highest. The

mortality of April and May was much greater in 1832 than in any other year. In both these months the average temperature of this year was lower than in any other. In August of 1832 the mortality was remarkably small, particularly among those under 2 years. In this year the average temperature of August was 3 degrees higher than in any other year, and 5 degrees higher than in that year in which it was the lowest. The average temperature of December in 1835 was 9 degrees lower than in that year in which it was the highest. The number of deaths in the table of the whole mortality was greater than in any other year. This was the year of the measles.

This would give the least mortality more frequently to the warmest than to the coldest years, but most frequently to those years which range between the coldest and the warmest.

The two next tables exhibit the mortality of those under 2 years from thoracic and abdominal diseases. In these tables the deaths from none of the eruptive fevers are included.

The number of those under 2 years who died of Thoracic Diseases.							The average Temperature.						
	1832.	1833.	1834.	1835.	1836.	Tot'l	1832.	1833.	1834.	1835.	1836.	Total.	R'nge.
Jan.	14	10	16	16	24	80	26.6	30.6	23.6	25.7	25.7	26.5	7
Feb.	14	4	15	17	10	60	26.3	24.6	32.5	24.01	30.3	27.6	8
March.	18	4	11	15	14	62	35.3	31.3	36.1	29.3	30.3	32.4	6
April.	8	4	8	12	3	35	39.6	46.4	45.2	40.6	43.09	43.01	7
May.	7	1	10	4	4	26	51.2	57.3	51.5	53.7	52.9	53.3	6
June.	7	3	4	6	7	27	63.03	61.6	63.3	63.8	58.4	62.5	5
July.	3	4	5	5	8	25	66.5	70.1	73.8	71.3	68.6	70.4	7
Aug.	0	9	7	17	6	39	70.3	66.7	67.3	67.4	65.1	67.4	5
Sept.	7	11	10	33	4	65	60.6	60.8	62.03	57.7	60.1	60.3	5
Oct.	20	9	9	43	5	86	51.3	50.1	48	52.4	44.2	49.2	8
Nov.	22	11	6	49	11	99	40.4	37.4	38.2	39.6	35.6	38.3	5
Dec.	37	9	5	28	7	86	30.3	31.1	27.1	21.8	28.2	27.6	10
Total.	157	79	106	245	103	690	46.8	47.2	47.3	43.1	45.2		

Thoracic Diseases.—From thoracic diseases we find the greatest mortality to occur in November. From this time there is a decrease in each month excepting March, to May. Between April, May and June, there is very little difference in the mortality. In August the mortality begins to increase and continues to do so till November. The greatest mortality occurred in 1835, the coldest year. The least mortality in 1833, the warmest year. In 3 months out of the 12 the greatest mortality occurred in the coldest year, in only 1 in the warmest. In 3 months out of the 12, the least mortality occurred in the warmest year, in 2 in the coldest. In August of 1832, there

was not one death from thoracic disease. This year the average of the thermometer was 3 degrees higher than in any other of the 5 years. In May, 1833, there was only 1 death from thoracic disease. This year the average of the thermometer was nearly 4 degrees higher than in any other year.

The average Temperature.								The Deaths, under 2, from Abdominal Diseases.					
	1832.	1833.	1834.	1835.	1836.	Total.	R'nge.	1832.	1833.	1834.	1835.	1836.	Total.
Jan.	26.6	30.6	23.6	25.7	25.7	26.5	7	3	2	4	3	2	14
Feb.	26.3	24.6	32.5	24.01	30.3	27.6	8	2	5	2	1	4	14
Mar.	35.3	31.3	36.1	29.3	30.3	32.4	6	1	4	4	3	0	12
April.	39.6	46.4	45.2	40.6	43.09	43.01	7	0	2	2	4	1	9
May.	51.2	57.3	51.5	53.7	52.9	53.3	6	7	1	1	0	3	12
June.	63.03	61.6	63.3	63.8	58.4	62.5	5	2	1	3	2	2	10
July.	66.5	70.1	73.8	71.3	68.6	70.4	7	3	11	7	7	3	31
Aug.	70.3	66.7	67.3	67.4	65.1	67.4	5	3	20	22	28	29	102
Sept.	60.6	60.8	62.03	57.7	60.1	60.3	5	18	25	22	22	60	147
Oct.	51.3	50.1	48.	52.4	44.2	49.2	8	7	9	12	7	31	66
Nov.	40.4	37.4	38.1	39.6	35.6	38.3	5	4	2	7	3	6	22
Dec.	30.3	31.1	27.1	21.8	28.2	27.6	10	1	7	3	2	4	17
Total.	46.8	47.2	47.3	43.1	45.2			51	89	89	82	145	

Abdominal Diseases.—From abdominal diseases the greatest mortality occurs in September. From this time there is a decrease pretty uniform to April. From April the mortality increases to September. The greatest mortality was in 1836, the least in 1832. There was but 1 degree difference between the average temperature of these 2 years. Neither of them was so cold nor so warm as the coldest or warmest years. In 4 out of the 12 months the greatest mortality occurred in that year which was the coldest, and in 2 in the warmest. In 3 out of the 12 months the least mortality occurred in the warmest, in 3 in the coldest.

The general impression to which these observations lead one is, that the warmer months and years are more favorable to health than the colder. This has been the result of every view that has been taken of the tables, with the exception of that in which the winter months of the different years were compared. Here, so far as there was any correspondence, the coldest seasons were more favorable to health. The correspondence is in but few instances very strong. But great allowance is to be made for the various circumstances which must enter into and modify such results, in addition to the errors necessarily connected with the collecting of facts from such sources, and arranging them in such a form as to render them available.

Observations upon a larger scale and extended through a greater number of years, might afford something more definite. But it is not to be expected that the exact effect of a single cause, where such a multiplicity of causes must be in operation, would stand out very obvious, however extensive the field of observation might be. This general correspondence, however, small though it be, between the warm months and years, and a diminished mortality, is sufficiently uniform to be worthy of attention.

ART. IV.—*Dropsy of the Fœtus. Congenital Hydrocephalus, Ascites, and Anasarca.* Read before the Boston Society for Medical Improvement, by W. CHANNING, M.D.

THE diagnosis of these diseases of the fœtus is not easy. A good deal of attention has recently been directed to these and other diseases of intra-uterine life. Thus it has been discovered that pneumonia may occur in the fœtus. Pleurisy has also been noticed, and its ordinary products found; and the same of peritonitis. An old writer, I think Puzos, has described the symptoms of fœtal convulsions, and he tells us that blood-letting removes the disease as by a charm. The cases in which pleurisy, pneumonia and peritonitis have been discovered, show how important it is to examine the bodies of dead-born children, and of those which survive but a few hours, or days. A very reasonable desire is always expressed by parents and friends to know what has caused the death in such cases. And this becomes still more urgent, when, as it sometimes happens, many children in succession are still-born, or survive but a very short time. Concerning diseases of the lungs in the fœtus, one would think much interest would be taken, especially that we may learn if any, and what modifications such diseases get from the condition of these organs before respiration occurs. It happens to us often to observe in the instances in which respiration is established, but in which life soon ceases, such a condition of the surface of the body as might be referred to an imperfect performance of some function of the thoracic viscera. It is often ascribed to some long continued or severe pressure of the brain during labor, or to some organic affection of the heart. But it is very rarely the case that any dissection is made, by

which the actual condition of the organ may be ascertained. To be sure, in medico-legal inquiries, where there has been suspicion of infanticide, dissections have been made, and sometimes such obvious congenital diseases discovered as have served to explain the death. But I believe it is rare with us to do this merely for its pathological interest, and this gives much value to the inquiries and results which have, as was said above, so lately come to us from Europe.

I remember one case of great interest in this connection, in my own practice, in which *purpura hemorrhagica* existed at birth. The appearance of the skin was most curious. It was literally covered in every part of it with purple or nearly black spots, perfectly circular, and above four lines in diameter, and apparently of the same shape, and occupying the same distances from each other. Where they were not, the skin was perfectly white, the free spaces being small. The arrangement of these spots was so symmetrical as to seem to have been artificially made. Hemorrhage soon occurred about the cord. It was impossible to check it, and in two or three days the child died. I now regret that an examination was not made.

In another case in which jaundice occurred soon after birth, and which was fatal, dissection discovered disease of the liver. Now it is quite easy to get permission to make these examinations. They are often desired, and if physicians amongst us will give themselves the trouble to make them, curious and it may be practical pathological knowledge may be gained from them.

Dropsy in the fœtus gets its interest principally from its connection with labor. Before this happens the woman may suffer much from the great size of the fœtus, and from the great amount of liquor amnii. It is rarely, if ever, however, that any notable trouble arises till labor sets in. I shall give some brief notices of cases which have come under my own observation.

CASE I.—This was a case of *hydrocephalus*. The case was under the care of my late and lamented friend, Dr. Gorham. The labor had far exceeded the usual time of the process, and circumstances having arisen to make Dr. G. uneasy about the patient, I was desired to see her with him. I found the head very low, just within the external organs, filling every where the pelvis, and to the feel quite as firm as usual. It was agreed that the forceps should be applied. I placed them over the sides of the head, their convex surfaces being to the sides of the pelvis. The blades locked readily, and the ends of the handles were at the usual distance from each other, as when the head of the standard

fœtus is between them. I made compression in order to secure a good command of the head, and was about to extract. I was surprised to find that the handles came together under very moderate pressure, and that the instrument at once slipped off in the attempt to extract. This same thing happening a second time, a more careful examination was made. Before stating the result, let me say that the instruments were applied with great ease—not the smallest difficulty occurred in locking them, and that they slipped off in the gentlest manner possible. In short, finding them to be thus coming away upon the use of slight effort, no force was necessary for their complete coming off. Examination discovered that there was water in the brain or head. The sutures were wide apart, or the bones which form them, and there was a distinct projection between them during pains. Water being in the head, explained its long delay in the pelvis under very fair pains. And more, it explained what happened to the forceps. The head was so elongated by its contents, in the only direction in which it could lengthen by a pressure or force acting above, it was only partly in the pelvis. The base of the cranium was far above the brim of this cavity, and of course the mastoid processes—the angles of the lower jaw—the projection of the occiput, were beyond the reach of the instrument. It had, in short, no firm point of support on which to rest during extraction. The instrument then just came together, by the yielding of the head, and was simply squeezed off, so to say, by the effort to extract, or bring away the head.

The length of the labor, its exhausting effects upon the patient, the impossibility of delivery by the means employed, and the probability of the death of the fœtus, determined us to use the perforator. This was done, and a flood of water followed perforation. Labor was now easily accomplished, and the woman soon after manifested the usual relief. She continued to do well. I saw her, I think it was about the third day after, and found her sitting up, out of bed, and combing her hair. This occupation shows how little, if any, was her exhaustion. Soon after my visit, she very suddenly felt as if something had broken within the pelvis, and immediately a most fœtid discharge, and in large quantity, containing liquid fœcal matter, came away. This was followed by alarming sinking. She never rallied, and died the next day. So rapid was decomposition, the weather being very hot, that an examination of the body was not made. This case teaches the danger of long continued pressure in

some instances, of the head of the fœtus ; especially when of such enormous size as it was in this example. It teaches, too, how grave may be the local effects of such pressure, without any apparent general disturbance. In this case all the functions seem to have been well performed, and the strength was unusually great. It finally teaches how wide and fatal, too, may be the influences of any sudden and great change in the condition of parts, the actual morbid state of which has not been declared by any observed symptoms.

CASE II.—Mrs. S. Her general health had long been enfeebled by much functional disease of the womb. Irritable uterus existed, with its usual sympathies. One of the most troublesome of these was great pain and tenderness in the course of the whole spine. She was a woman of much firmness, and complained scarcely never, though always suffering. But when I examined the spine by pressure, such was the increase of pain that tears poured from her eyes in her efforts to resist the expression of suffering. The womb was slightly prolapsed. She had often aborted, and came under my care a second time in about the middle period of pregnancy. By second time, I mean I had been consulted by Mrs. S. a year or more before, on account of uterine and spinal complaints.

Pregnancy advanced with occasional troubles, and labor took place at the usual time. This was tedious and very painful. At length the head came within reach of examination, and was found to be distended with fluid. The sutures were wanting every where, the bones being found widely separated, to the extent, as was ascertained after delivery, between the parietal bones, of about three inches. The head was perforated. A great discharge of water took place, and the delivery then proceeded rapidly. Very soon after labor Mrs. S. was seized suddenly with extreme distress through the whole abdomen—fulness occurred here, and exquisite tenderness on pressure. There had been no chill, and the violence and suddenness of the attack did not resemble peritonitis. The usual discharges from the uterus continued. After-pains were severe. The bladder was free.

The treatment adopted at once had for its object the palliation or removal of suffering. Opium was the principal internal remedy. Fomentations were applied to the abdomen, and these not succeeding soon to give relief, an embrocation of spirits of turpentine was substituted. This produced great irritation of the skin, with intense redness, but was soon followed by marked relief. Mrs. S. slowly

but entirely recovered, and has since had two healthy children, each at the full time.

CASE III.—I was desired to visit Mrs. — in a neighboring town. The messenger said that she was in labor, but something had given way, and her situation was very alarming. I got to the address in about an hour, and learned from the physician in attendance that the labor had been long and painful—that during an unusually severe pain, Mrs. W. had suddenly complained of acute, agonizing pain low down in the left iliac region, or near it, and for which she earnestly demanded immediate assistance, and that before any thing efficient could be done, she exclaimed that something had given way, and that after it all suffering had ceased. I learned further that some hemorrhage had occurred. The presenting part, the head, had receded soon after the sense of tearing just named, and no part of the child remained within reach of the finger. There was general distress—vomiting, coldness, rapid and feeble pulse. The countenance was much sunken. In short, the symptoms of ruptured womb were all present.

It was determined, on consultation, to attempt to deliver the child by the feet, if practicable, and if it could be done without a dangerous exertion of power. The feet were reached without difficulty, I mean with much less than is encountered in common cases of turning. The feet descended gradually, and comparatively easily, and at length the whole of the infant, save the head, was delivered. Here progress was arrested. Such effort was made as is commonly employed, but in vain. The head would advance as if about to come forth. Then it would stop, and suddenly return to its former situation when effort was relaxed. I now determined to perforate the head, and passed the instrument at a point near the occiput. A great discharge of water immediately took place, the bones collapsed, and the head was soon born. Great relief soon followed. The vomiting ceased. The pulse rallied. The skin grew warmer. I heard from this patient, but did not see her again. The symptoms became more and more favorable until the fourth day. Sinking now took place, and she died on the fifth. Examination was not permitted.

In this case rupture of the womb took place probably without the concurrence of previous uterine disease. In some recently printed cases, a connection of rupture, if not dependence of it, on some morbid or unusual state of the womb, has been discovered on dissec-

tion. So often has this been observed, that one writer, at least, ascribes this species of rupture to some such condition as renders the womb unfit for the usual occurrences of labor. I have seen many cases of rupture, and in one of them only was there such obvious disease of the womb as at once to explain the accident. The woman was a washerwoman. She had complained much of pain and tenderness at the lower and right part of the abdomen. The pressure on this part which her occupation demanded was especially annoying. The labor was long. I was desired to see her towards the close of it. The head was very low, and it was determined to apply the forceps. There was a short delay of the operation, and suddenly the pains ceased; there was a small but continuous discharge of blood from the vagina, and great exhaustion or sinking manifested. *The head did not recede.* It would have been perfectly easy to deliver with forceps or crotchet, but the woman peremptorily forbid all attempts to save life, and most emphatically refused all succor. She sunk more and more rapidly, and died of a Saturday. I examined the body early Sunday morning. No sooner was the abdomen cut into, than the intestines appeared at the wound, after the same manner as I have witnessed during life. The child was found lying out of the womb, and such was the force required to drag the head from the pelvis, that it was not difficult to account for its not receding after rupture. There was on the left side of the womb a space five or six inches in width, and more in length, in which the proper uterine substance was wanting. It was strictly membranous. It contrasted strongly with the thickened, contracted, proper substance of the womb which wholly surrounded it. It did not less so in regard to color. It was black, while elsewhere the womb was perfectly white. Through this black, membranous, degeneration, if such I may call it, rupture had occurred, and through it the child had escaped, all except its head, into the cavity of the abdomen.

I have referred to this case wholly in consequence of the remark which was stated above, of the frequency with which rupture has been complicated with disease of structure, by a foreign writer, and to add that in no other examination which I have seen, or made, of ruptured womb, have I met with any such morbid lesion of structure as has attracted my regard. It may not have been looked for in all the cases, or with sufficient care in any. For one other cause have I introduced this case. It was said that in the one in which hydrocephalus was complicated with rupture, it was probable that the accident

occurred in consequence of the pressure of the enlarged head. When this pressure acted, and whether as both predisposing and exciting cause, and so, during pregnancy, or only as the latter, and if last, only during labor, could only have been answered by dissection. In any future instance it will be very interesting to trace, as far as it can be done, what actually the connection is.

CASE IV.—This was a case of feet presentation. The labor had advanced as usual, and at length the extremities and trunk were born. The pains had not been very strong, and ergot had been given. At length the uterine efforts quite ceased, the head still being in the pelvis. I now saw Mrs. T. The womb was quiet, the child so far forth as stated, the head not advancing with such mechanical effort as was thought proper, and as is usually employed. I was surprised at the resistance of the head to any thing like progress. The fingers were readily passed into the mouth and the chin depressed, and extracting force used, but in vain. The crotchet was now passed into the mouth, and with this delivery was soon accomplished.

The cause of difficulty was obvious enough. The cranium, filled with water, was monstrously enlarged. Ascytes also existed.

In this case attention had not been directed to the abdomen, which apparently contained much water, and hydrocephalus could not have been *diagnosed*, as the cause of the delay of the head in the pelvis. And if it had been discovered, viz. the ascytes, would the inference probably have been that the difficulty was owing to dropsy in the head? We very well know how often great difficulty is experienced in getting away the head in *preternatural labor*. This is often so when uterine efforts are strong, and the patient both willing and able to aid them. In the above case, the pains had ceased. The woman was much exhausted, and could exert but little voluntary power. These facts very well explained the difficulty of completing the labor without resorting to the hypothesis of hydrocephalic complication. I am quite ready to confess, however, that if the ascytes had been observed, there would have been strong ground for a suspicion that the difficulty might have had its cause, or one of its causes, in such complication. This admission suggests a rule of practice, which may easily be followed, viz. in similar cases always with great care to examine the abdomen, and the extremities too, so that if dropsy be present in them we may have it in mind that the brain may be the seat of the same disease. As in these cases the child is generally dead, the only question which arises is, how shall the patient be

spared most suffering? Perforation may be made, as it very easily was in the second case, below and behind the ear, through the roof of the mouth, or in short in just such place as is nearest, and which will be at the same time best fitted for the purpose.

CASE V.—I know nothing of the labor in this case. During a winter term, a preparation was sent to me from the country, and described to be of very curious interest, as a monstrosity which had been produced by the imagination of the mother. The story was this. A sea-captain had returned from the West Indies, and brought with him a very large *turtle*. He had the animal carried to the house, and deposited him in the yard for safe keeping. His wife being then in the middle period of pregnancy, had not heard of the arrival of this guest, and encountered him as he was lying and sunning himself on the door-step. As she approached, he projected his limbs from the shell and moved off. She was exceedingly frightened. She went, however, her full time, and was delivered of a most misshapen mass, which was believed by every body to be the *turtle*. The weather was very cold, and for *safe keeping*, the monster being dead, was put into a room where it was soon frozen solid, and in this way preserved its shape perfectly. In this state it was sent to me. It soon began to thaw, and after remaining one night in my warm room in the college, I found in the morning that it was a dropsical foetus, entirely put out of shape, and I may add out of *countenance*, by the water which filled every part of it. The skin soon gave way, the water escaped entirely, and nothing remained but a loose bag of bones. I have stated this case as showing how extensively dropsy may exist in the foetus. Hydrocephalus, existing alone, has been referred to—then as complicated with ascytes—while this last case shows the universal occupation of the foetal body by water.

ART. V.—*Stricture of the Œsophagus.* A paper read before the Boston Society for Medical Improvement, by HENRY G. CLARK, M.D.

PERHAPS there is no disease accompanied with more distressing sensations to the patient, or whose treatment is more unsatisfactory to the attendant, than stricture of the œsophagus—especially where it depends upon structural disease. Indeed, Boyer and some others

assert that it is *always incurable*. I have no doubt that *many curable cases remain unrelieved*, either from the intractability of the patients themselves, or from the difficulty experienced in adapting instruments to their particular wants.

Three varieties are recognized, namely: 1st, the *spasmodic*; 2d, the *inflammatory*; and 3d, the *scirrhus* or *malignant*. Two of these, the *spasmodic* and the *malignant*, may as well be passed over; the first *requiring* little or no treatment, and the latter being *benefited* by none. The *second* variety is, therefore, of the greatest practical importance. It results from *common* inflammation, either acute or subacute, and consequently is the kind most frequently encountered. It may be distinguished from *spasmodic* stricture by its *permanency*. It is not so easily known from *scirrhus*; but the absence of the peculiar signs of that disease, *especially in the general condition of the individual*, will commonly make the diagnosis sufficiently distinct. Inflammatory stricture may also frequently be traced to some probable exciting cause, suddenly supervening upon *previous good health*; such as the swallowing of highly irritating fluids, the lodgement of partially masticated food, foreign bodies, &c. &c.; while malignant disease is frequently *preceded* by *a vitiated constitution* and *bad* health. All the tissues of the *œsophagus* may be involved in this stricture, or it may be strictly limited to the mucous membrane.

The principal modes of treatment, recommended and practised by surgeons, have been two—*cauterization* and *dilatation*. The caustic treatment was adopted by Mondière, who professed to have cured 4 out of 7 cases; also by Sir Everard Home, Charles Bell and Dr. M'Ilvaine, with very fair success—but they used the comparatively mild nitrate of silver, and in no instance attempted to *burn* a passage through.

The baron Boyer and Ruysch condemn the caustics entirely in this disease.

The method by dilatation is certainly best adapted to *many* cases, and, if the nitrate of silver be carefully used in connection with it, to perhaps *all*. Sir E. Home, although somewhat of an advocate for caustics, admits that dilating instruments may be applied usefully to numerous cases where *severer* means would be unjustifiable. He used the gum elastic catheter, or bougie; and Mr. Samuel Cooper thought it the best instrument that could possibly be used. But its inconvenient size, when the stricture has become partially dilated in

the progress towards a cure, renders it often quite objectionable, and sometimes useless. The difficulty in *passing* these large sized bougies is however very much owing to the want of the *small flexible guide* which the extremities of the smaller size furnish.

Professor Jameson, of Baltimore, has reported several successful cases, on which he tried, without any benefit, many different instruments, and which he finally cured by one of his own invention. This is made with a shaft of whalebone, having an ivory bulb at the end, of a size properly adapted to the state of the stricture. It is accompanied by a *guide, or director*, which consists of an ivory ball about two lines in diameter, fastened upon an elastic steel wire. This, when used, is slipped through the bulb of the instrument, in a direction parallel to its shaft, and passed along with it, but of course a little in advance.

With these prefatory remarks I will submit the following case.

In December, 1838, I visited Miss B., and found her suffering extremely from the want of food and the impossibility of swallowing it. She was 40 years of age, tall, pale, with bloodless lips and considerably emaciated. She had just risen from her bed, to which she was obliged to resort after the effort of dining; a long and fatiguing operation. She had a tolerable appetite generally, and at times says she is almost distracted with hunger. She has memorrhagia, obstinate constipation, and various other troubles, which seem to have been induced by her inability to exercise in the open air.

Six years since, after eating some pieces of meat rather hastily, she was seized with soreness of the throat, and considerable dysphagia following it. This lasted for a few days only with any severity, but did not then entirely disappear, and in the course of five or six months returned, so as to render the deglutition of *solid food* quite difficult. She had at this stage of the trouble occasional turns of choking and partial vomiting. There was no great alteration in these symptoms for three years and a half, except that her general health had suffered somewhat. Since the summer of 1836, she has taken no meat at all, and has been obliged gradually to diminish the quantity of the vegetables, puddings, &c. upon which she subsisted; till at present she takes only liquids.

This patient has been the subject of much medical treatment, and has lost all her teeth, in consequence, as she thinks, of a long continued perseverance in mercurials. No examination has ever been made of the *œsophagus*.

Finding no external disease about the neck, I proceeded to pass a common small probang into the œsophagus through the mouth, but it was suddenly arrested at about five inches below the top of the pharynx, or eight inches measuring from the anterior edge of the upper jaw. I next tried wax bougies of two or three lines in diameter, and failed. The smallest sized elastic catheter, *one* line in diameter, was armed with its wire and passed through the strictured portion several times. The larger sizes were again tried, without success. However, *the difficulty was ascertained*; and I left the patient, directing only a daily enema of warm water.

January 11th, 1839.—Patient reports herself the same. Some soreness occurred in the œsophagus after the use of the instruments, which lasted for a day or two. Bowels relieved by enemata. This day a solid elastic bougie, *with a tapering extremity*, of double the size of the catheter, was with some difficulty passed through the stricture. The contracted portion seems about three fourths of an inch in extent. I now also found that the œsophagus just above the stricture was a good deal dilated, and formed a sort of pouch round it, which gave great trouble by lodging the food attempted to be swallowed. And this, it may be remarked, is no doubt the great obstacle to the passage of an instrument, in many cases, of any useful size, without the aid of a director, which is so constructed as *easily* to slide into the small outlet. It would be an accident of the most serious nature to force a new passage by driving the point of the dilator through the walls of the canal.

The patient living out of town, she was seen only at intervals of five or six days; but at the end of ten weeks the stricture had yielded so much that she had been able to increase the quantity and consistence of her diet. A bougie of the size of a large catheter, and the largest of the elastic French instruments that could be found, now passed readily, and it was therefore necessary to replace it by a new instrument of different construction. I procured some of the dilators recommended by Professor Jameson, and described in another part of this paper, but it was impossible to use them on account of the too forcible spring of the whalebone shaft, and the want of a flexible guide. They produce great irritation by pricking the throat in vari-



ous directions, and in being often caught in the pouch formed above the stricture. Various other instruments were tried, with no better success. I then recurred to the elastic bougies, and having selected a hollow one of suitable size, slid upon its shaft an oval bulb of ivory, leaving about an inch of the smaller extremity free, for the purpose of a director. This bulb was secured to the shaft by gum mastic, and a rivet passed through its centre. It was armed with an untempered iron wire, which passed down to the centre of the ivory bulb, being there arrested by the rivet. This answered the purpose perfectly, and the patient continued to improve; the ivory bulb being regularly increased in size. (See drawing.)

December, 1839, one year after first visit. Patient has regained her health, strength, and considerable color. She can swallow almost any light food, and in sufficient quantity to satisfy her appetite.

At the present time (Oct. 1842) the œsophagus is dilated to nearly its natural size, and the patient continues well.

ART. VI.—*Fiske Fund Prize Dissertation of the Rhode Island Medical Society.** By USHER PARSONS, M.D., Providence.

“What are the Causes, Character and Nature of the Diseases of the Spine, both Structural and Functional; and what is the best mode of Treatment to be employed in each?”

THE number and variety of spinal diseases, and their increasing frequency, demand of the medical profession an investigation of their nature and causes, and the best means of prevention and cure.

Consisting as they do of structural as well as functional diseases, it is necessary to commence our subject with a brief view of the anatomy and physiology of the spine. In doing this, we behold what is everywhere presented in animal mechanism, a wonderful display of creative skill, in the form and adaptation of every part to the office it was designed to fulfil. In the first place, we observe the framework, combining the essential properties of *strength*, for firmness of muscular attachment and action, with the least possible volume and weight of substance,—of *flexibility*, for every necessary variety of motion and attitude, with effectual guards against dislocation,—of *security*, for the lodgement and protection of the delicate cords or channels of sensation and motion, amid all the concussions to which the body is liable, yet providing at every joint a safe passage to the nerves leading from the cerebro-spinal axis to the sentient extremities. In the next place, we observe an arrangement of tendinous cords and muscles attached to its processes, fitted to sustain the frame-work in an erect posture, yet so numerous and varied in their order and arrangement as to admit of every desirable kind and extent of motion; and finally we perceive it giving points of support to the

* At an adjourned annual meeting of the Rhode Island Medical Society held at Providence on the 8th day of September, 1842, the Trustees of the Fiske Fund announced that they had awarded to the author of the Dissertation bearing the motto, “*Vestræ petitioni respondeo diligenter*,” the premium of one hundred dollars by them offered for the best dissertation on the question,

“What are the Causes, Character and Nature of the Diseases of the Spine, both structural and functional; and what is the best mode of Treatment to be employed in each?”

Upon breaking the seal of the accompanying packet, they ascertained its author to be, Usher Parsons, M.D., of Providence.

In awarding the premium to this Dissertation, neither the Trustees nor the Rhode Island Medical Society hold themselves responsible for the doctrines herein inculcated, treatment recommended, or opinions advanced.

Attest,
THOMAS H. WEBB, *Secretary*.

RICHMOND BROWNELL, } *Trustees*.
THEOPHILUS C. DUNN, }

ribs which protect the organs of circulation and respiration, and a firm attachment and support to the great channels of circulation and to many of the viscera of the abdomen. Amid such a multiplicity and variety of properties and functions, many of them essential to life, can it be thought strange that disorders and diseases are numerous?

The spinal column is composed of 24 separate bones called vertebræ; and as each vertebra increases somewhat in size from above downward, they collectively exhibit a pyramidal figure, with its base resting on a large bone, the sacrum; and as this bone narrows toward a point, and is terminated by a smaller one, the os coccygis, they are called the lesser or inverted pyramid. Of the 24 vertebræ, 7 belong to the neck, 12 to the back, and 5 to the loins. Viewed laterally, the column presents three curves; the cervical portion is slightly concave posteriorly, the dorsal largely concave anteriorly, to allow room for the thoracic viscera, and the lumbar concave posteriorly, to give support to the liver and other large organs of the abdomen. A line drawn perpendicularly from the apex of the pyramid, or the atlas, to the centre of its base, would, if viewed laterally, exhibit a preponderating portion in front of it; and the weight of the head superimposed, and of the thoracic and abdominal viscera in front, increases the natural tendency of the column to bend forwards, which tendency is, however, resisted by the muscles extending along the spine from the sacrum to the head.

Each vertebra consists of body and processes. The bodies are interiorly of a light cancellated structure, increasingly so from above downwards; but their surfaces are hard and compact, as is nearly the whole substance of the processes.

Between the surfaces of the vertebræ is interposed an elastic fibro-cartilaginous substance, somewhat resembling gum-elastic, which acts like a cushion, yielding to pressure in all directions. The bodies of the vertebræ are held together by strong longitudinal fibrous bands in front, by connecting ligaments between the processes, and by deep-seated muscles.

The whole column is maintained in an erect posture by large superficial muscles, which ascend from the pelvis to be inserted like the stays of a ship from her hull to her masts. They are the latissimus dorsi, the longissimus dorsi, and the sacro-lumbalis. These powerful muscles fill the space between the sacrum and the ribs; and the two latter are so intimately blended and incorporated together as to

have the appearance of one large muscle, covered by and adhering to a strong, thick aponeurosis, of a white and glistening appearance, having in itself scarcely any trace of elasticity.

But there are other muscles connected with the spine, and influencing its rectitude, which neither arise from the pelvis, nor are comparable in their office with the stays of a ship. They arise from the occipital bone, and from the cervical and upper dorsal vertebræ, and are inserted into the shoulder and ribs; and may be compared to the lifts of a ship's yard, or the chains of a suspension bridge. In either case, the mast, or the prop to the chain, sustains the appended weight in equipoise. But when a defect or weakness occurs in one side of the mast or prop, or spine, or when undue weight is appended to one of the suspending cords, or when the cords are of unequal strength, or one of them stretches in its length, then the mast, prop or spine must bend and exhibit the appearance of a lateral curvature. The muscles thus situated in reference to the spine, are the *trapezius*, *rhomboidei* and *levator scapulæ*.

From this brief survey of the structure and functions of the spinal column and its appendages, let us turn to their pathological states.

And, *firstly*. When the spinal column has been held, for a short time only, in a laterally inclined posture, the inter-vertebral substance which had yielded to this state, will, on the resumption of an erect posture, recover its former equal thickness. But if the posture be long continued, the ligaments and muscles accommodate themselves to this state, and becoming permanently fixed, oppose the natural resiliency of the inter-vertebral substance which tends to restore an erect posture; and the lateral inclination thus formed, will in process of time affect in a corresponding manner the relative thickness of the two sides of the vertebræ, and thus produce a still more permanent distortion. The consequence of all this is, a change in the centre of gravity, for a line now drawn from the vertex of the head to a line between the feet will exhibit unequal volume of the trunk on its two sides. To correct this, there is a constant effort of the muscles to restore the equilibrium by bending the spine, in some other part of its length, in an opposite direction. Hence after a time another curve is formed, which may be termed secondary, or compensatory, having the same pathological character as the first. And this secondary curvature may and often does exceed the limit necessary to balance the first, and require to be compensated in its turn by a third curvature, thus giving to the column a serpentine aspect.

Secondly, when a small number of the bodies of contiguous vertebræ are softened or destroyed, by ulceration or necrosis, originating in constitutional or local cause, the spine can no longer be sustained by the ligaments and muscular stays, but bends forward at the diseased part under the weight of the head and other superincumbent portions, and produces an angular projection backwards, commonly called *hump* or *hunch-back*. Sometimes, in consequence of the diseased vertebræ being more wasted on one side than the other, the projection may present a twisted appearance. This disease often originates in tubercles formed in the cancellated structure of the vertebræ and the intervertebral substance.

Thirdly, when several of the bodies of the vertebræ are softened, or when, from weakness of the muscles that stay the back, the anterior or antagonizing muscles in front of the abdomen act with undue power, a more extensive and gentle bend of the spine is produced, called *posterior* curvature.

Fourthly, in posterior projection, as in lateral curvature, the centre of gravity is changed, which nature strives to correct by bending another portion of the spine forwards, producing *anterior* curvature. I am not aware that any author has spoken of anterior curvature as compensatory to a posterior projection, but I have seen cases that suggested the idea, and Dr. Abbie, the orthopedist of Roxbury, informs me that he has seen proof of the fact. Anterior curvature arises also from the same constitutional causes as posterior projection, as from rickets or from *mollities ossium* affecting the processes instead of the bodies of the vertebræ. It is also caused in the loins by the early shortening of one limb. This form of curvature may embarrass the viscera by projecting into the great cavities more than other kinds of distortion; but fortunately it is of rare occurrence.

Fifthly, the vertebral column may be shortened, without any material deviation. This may be produced by rickets and by *mollities ossium*. The two diseases are by some writers confounded with each other. But rickets, it should be remembered, is a disease of childhood alone, and is preceded by other marks of the disease, as curvature of the legs; while *mollities ossium* occurs in mature age, and is referable to some pre-existing constitutional disease, as syphilis, cancer, &c. This abnormal state may be called *shortening of the spine*. As it causes an eversion of the lower ribs, it gives rise to an appearance common also to angular projection, which is called chicken-breasted.

Sixthly, abscesses may form between the lumbar vertebræ and

psoas muscle, and point in various depending places. They may erode and destroy the bodies of the vertebræ by ulceration, and sometimes the disease, owing to a jar or shock of the loins, may begin in the vertebræ themselves.

Seventhly, injuries of the spine, as fracture of the bodies or processes of vertebræ, with or without dislocation.

Eighthly, a defect may exist in the bony cylinder enclosing the spinal marrow, caused perhaps by an undue quantity of serum surrounding the spinal cord, and pressing its membranes outward at some point in the form of a sac. This constitutes *spina bifida*.

Ninthly, there may, from some morbid cause, general or local, be an undue deposition of osseous matter on the surface, forming a large tumor called *exostosis*.

Tenthly, the spinal cord or its membranes may be diseased structurally or functionally.

LATERAL CURVATURE OF THE SPINE.

The foregoing pathological remarks prepare the way for an investigation of the nature and the best mode of treatment of the several diseases we have mentioned, as appertaining to the spinal column and its appendages. Considering them in the above order of arrangement, we shall proceed to describe the one which is of most frequent occurrence, lateral curvature of the spine.

The following table, made out by Mr. Ward, an eminent English surgeon, will show the comparative frequency of the various spinal diseases as presented to him during a long career of professional experience. Of 282 cases, there were,

Of curvature to the right side without disease,	230
Of " " left side " "	10
Of posterior curvature without disease,	9
Of " " with "	30
Of anterior curvature,	3
	<hr/>
	282

These occurred in private practice, and, so far as I am able to judge from experience and inquiry, they present a fair sample of the average proportion in other large cities among the higher classes of society; but in other communities, the proportions, as we shall have occasion to remark, would be somewhat varied.

The causes of lateral curvature may be considered under the heads of proximate and remote. The bones themselves, it has been well

ascertained, and the foregoing table confirms the fact, are not primarily diseased. Formerly, ulceration of them and the formation of matter were apprehended as among the sequelæ, to prevent which, as well as to promote the absorption of matter, many surgeons were in the habit of torturing their patients with issues, setons, moxas and hot irons. Their efficacy in posterior angular distortion, *maladie du Pott*, which, as dissections have proved, is essentially different in its nature, partly gave rise to this most pernicious error as to the proximate cause. Another origin of the mistake has been the reports of cases of lateral curvature which represent the bones after death as softened and full of scrofulous matter. This opinion, Mr. Shaw thinks, will on close investigation be found incorrect; "for in the greater number of instances the internal structure of the bodies of the vertebræ has a natural appearance. It is easy to account for the mistake. If the vertebræ of a patient who has long been confined to bed, be examined, the appearance described above will be found; but if the person has been in the habit of taking exercise a short time previous to death, the bodies of the vertebræ are discovered to be as firm and compact as those in a perfect spine. It is well known that the shape of the vertebræ is materially altered in cases where the spine is much distorted, but as no mark of disease is discovered when a section of the bones so misshapen is made, we may infer that the change of form is independent of any specific disease, and also from the fact that it is found to correspond to the direction in which the pressure of the distortion has been made." In fact, it is almost certain that the vertebræ, in cases of lateral curvature, are even less liable than more solid bones to be inflamed by the irritation caused by pressure; and the opinion formerly prevailing, that actual disease of the bone does exist in such curvatures, is without foundation;—an effect has been mistaken for a cause.

Of the cartilages it may be said that their soft and yielding nature tends to produce lateral curvature; and as this softness decreases by age, the tendency to the disease diminishes, rarely appearing after middle age. Mr. Pott says he has never known it occur after the age of forty. To the greater firmness of the cartilages in laboring people, M. Wasse attributes their exemption, as compared with the sedentary; they sink less in height during the day. A yielding state of this substance seems therefore a necessary condition; but this is by no means a proximate cause. In respect to the ligaments of the vertebræ, a relaxed state of them may accompany curvature, but as

they are passive in their nature, this relaxation must result from the influence of some other cause.

The next texture to be considered, and one which plays an all-important part, is the muscular. It is here that the trouble begins, and here it continues. Commencing insidiously, and in parts deeply seated, the change from their normal state passes on unobserved until a more palpable one is discovered in distortion of the spine itself, and of the whole contour of the trunk. The spinal column, as before remarked, depends for its rectitude on the muscles or stays that hold it in equilibrium, which it loses whenever the muscles of one side act with a force different from those of the other side. It is not the positive but the relative force that is to be considered; for the muscles of both sides may be and generally are weaker than those belonging to a healthy spine, yet a slight difference in the force of traction between the two sides results in the formation of a curve, into the convex side of which the muscles, acting with undue force, will be found inserted. The same effect is also produced, when both muscles are of equal strength, but those of one side are more acted on than those of the other; as when the pelvis is depressed on one side by lameness of the hip, knee, or ankle, or by a shortness of one limb, in which nature accommodates herself by bending the spine, so that the patient can bring the foot to the ground; or when the muscles leading from the back to the right shoulder act, by using the right arm exclusively.

I may here briefly advert to the opinions of the two most distinguished writers on spinal curvature in respect to two other causes of the disease. M. Guérin, who undoubtedly stands at the head of orthopedic surgery in France, in his treatise on the etiology of lateral curvature, maintains that a great number of cases are founded in a morbid retraction of one or more muscles, or a part only of a large muscle of one side, caused by some fault in the brain or spinal marrow; and he goes into a long process of reasoning to establish his position.*

I have thus, in duty to the reader who expects to have the new doctrines, emanating from high sources, posted up to the present time, barely alluded to Guérin's etiology of spinal distortions, published in 1841. He, however, does not refer all cases to this cause;

* His first point is, that manifest deformity of the nervous centres in new-born children, is commonly attended with spinal deviations; secondly, where no such abnormal alteration in the nervous centres manifestly exists, he has discovered it in some autopsies. But as such verifi-

knowing, as he must, that in a majority of them, more satisfactory ones could be assigned.

The other doctrine is that of Dr. Stromeyer of Germany, who with Mr. Dieffenbach holds there, the rank that M. Guérin does in Paris. He maintains that lateral curvature is produced by palsy of the serratus major anticus of one side, which he attempts to prove by numerous experiments. But as the practical inferences from this system are unimportant, they may be dismissed with the remark, that while adequate causes are assignable—and such in most cases do actually appear—there can be no occasion for searching after others, which if they are proved to have any effect, have very little to do in the indications of treatment.

The *remote causes* are numerous, but the principal one is muscular debility, general or local. Hence the disease is confined mostly to early years, before the muscular frame is fully developed, and occurs rarely after the age of 24, commonly before 18. It is peculiar to females, in whom it occurs a hundred times when it once affects the other sex. (*Shaw.*) It is confined chiefly to persons in easy circumstances; in fifty cases there will not be found more than one in indigent life. It affects mostly those who compress the muscles of the spine by stays, and thus prevent their due development of volume and strength; also those who use one arm exclusively in their daily avocations; and those who live secluded and inactive lives.

It would be impossible to find a class of persons in whom all these circumstances are so fully combined as in young ladies at boarding-schools, and it is in these, of all places, that the greatest number of cases are manifested. “It appears, from actual computation,” says Prof. Caldwell, “that of the females who have been accustomed from early life to tight corseting, nearly one-fourth have some unnatural or disfiguring flexure of the spine. A Scotch gentleman of distinction assures us that he has examined about 200 young females in fashionable boarding-schools, and scarcely one of them was free from corset injury. Those whose spines were not distorted, had unsightly effects produced on their shoulder-blades, collar-bones, or

cations are not often practicable, he endeavors to establish the point by analogy and inferences: 1st, from the fact that such spinal distortions are often co-existent with other diseases, as club-foot, wry neck, and permanent contractions of the joints, indicating a common nervous cause, and with diseases known to originate thus, as paralysis, epilepsy, &c. 2dly, he cites many cases of spinal curvature following cerebral and cerebro-spinal affections, and concludes that though there co-exist only some very slight affection, as squinting, or even none at all (for the spinal nerves may be the only ones affected), yet the effect may be a loss of equilibrium in the spinal muscles, and consequent deformity.

some other part of the chest, which stuffing or wadding would be required to conceal. Some were hunch-backed, and in not a few, one shoulder was higher than the other, effects which in our own country are much more frequent than is generally suspected." What do we actually find in these schools? There is feeble respiration, and consequently spare oxydization of the blood; inaction, and consequent debility, of the muscles, besides which, those of the spine are compressed and weakened by corsets; inclination of the body to one side whilst using the arm in drawing, writing, &c., and consequent enlargement or elevation of the right shoulder, which becoming stronger by use, gradually frees itself from the compression till it draws the spine into a curve. There is also a tendency to curvature in another part of the spine from the same causes; the constant efforts made to support the spine erect, with weakened muscles, induces a sense of fatigue, which the pupil seeks to relieve by inclining the body to one side whenever she finds the eyes of the instructor turned away from her.

The neglect of exercise and seclusion from fresh air in our schools, calls loudly for reprobation. The young of all classes of animals are prone to exercise, and by it acquire muscular development and energy. The wild savage, who ranges his native forest, free from the tyranny of custom, exhibits a spine straight as the winged arrow that flies from his sinewy grasp. "The attempt to alter the natural figure of the body by tight stays and tight lacing, the want of proper and daily exercise, by which the health is preserved, and the body enabled to carry on its functions, cannot be too strongly condemned."

Although confined mostly to the rich, there are cases of this disease among females of humble condition, whose occupation is sedentary, such as lace-makers, dress-makers, tailoresses, and the like; also persons carrying heavy burdens in one hand or on one arm or shoulder, as a young mother, or nurse carrying a child. An interesting case is given by Mr. Child, within the last year, where an aged aunt rested much of her time upon the left shoulder of her niece, and the effort of her muscles in sustaining her weight caused a curvature to the left side. Nor are young mechanic apprentices free from it. In such as are employed in printing and press work, where strong and repeated exertions of the right arm are required, the spine is apt to become twisted.

I should do injustice to the subject, were I not to mention among the causes of lateral curvature, depression of spirits. In reflecting

on a large number of cases that have come under my care and observation, a majority of them seem to be either caused or aggravated by deep affliction or disappointed affection. Some recovered from the acuteness of their grief with manifest improvement in the strength of the dorsal muscles, but relapsed immediately on the occurrence of new afflictions.

Curvature of the spine, like other malformations, as club-foot, fissure of the palate, hare-lip, &c., may be congenital. Such cases are too often neglected, and considered as helpless. The remedies usually employed for the disease in after years, may, if judiciously varied to suit the tender frame, give relief, if not effect a cure. They should be used as soon as the strength will bear, and before the bones become formed.

Spinal deviation may arise from debility coming on after the infantile complaints, such as small-pox, scarlet-fever, measles, whooping-cough, have too rapidly succeeded each other; and it may assume various forms, though most generally the lateral. In such cases attention should immediately be given to the state of the constitution, to fortify it as soon as possible by any means that may suggest themselves, and some slight support may for a time be necessary to arrest the progress of the distortion.

Symptoms.—Patients complain of pains in the pit of the stomach, in the side or in the abdomen, most frequently, however, in the back or chest, with general lassitude, and sometimes numbness of the limbs. But often no complaint is heard till the curvature is discovered by others. The child, from 9 to 16 years old, frequently attempts to prevent the dress from falling off one shoulder; or one shoulder appears higher or larger than the other; or one of the collar-bones, or one side of the breast-bone or the breast itself, appears fuller than the other. A swelling, as the parent supposes, is discovered at the ends of the false ribs of one side, as if a tumor were growing within; a thickness or fulness of one side, and a sinking in of the other; one hip appears to project, or, as the mother expresses herself, is “growing out;” one leg appears shorter, and the patient is in the habit of standing on one limb with a hand behind the back holding the opposite elbow; a peculiar manner of walking, one foot being swung round, and the shoulder thrown forward. I have in several instances known parents, and even young physicians, to mistake a curvature between the shoulders for a tumor under the shoulder-blade, and curvature in the loins for hip-disease.

The diagnosis of lateral curvature is easily understood. A plumb-line falling from the centre of the neck in the median line, will show the slightest deviation. The most important point to determine is the cause; whether it be diseased vertebræ, for this does no doubt exist in some rare cases, or whether it be a shortening or lameness of one limb, a weakness in the spinal muscles, or mollities ossium or rickets.

I have already adverted to the fact that where one curvature exists some length of time and destroys the equilibrium, there is an effort of nature to restore the central line of gravity, by producing a second, or compensating curve. M. Guérin remarks that an actual pathological curvature is never single. "I have," says he, "collected and described before the Academy, all the morbid specimens now in the capital, and cited all the cases of the living that I ever knew, all which show two, three, and sometimes four curvatures alternating, almost always three, very rarely two, and never one."

Authors differ in opinion respecting the primary seat of lateral curvature. Mr. Shaw contends that it always commences in the loins, the dorsal curve being secondary; and a majority of writers concur with him. Mr. Child and Mr. Coulson contend that the upper curve is first formed. When this discrepancy first arrested my attention, I was inclined, judging from the cases I had witnessed, to concur with Mr. Child. Since then, however, I have examined several other new cases, and found them all existing in the loins. They were, however, young subjects, short of eight years old, and not yet exposed to the influence of those causes that are known to be most productive of distortion, viz., corsets and undue exercise of one arm. On the other hand, press-men, who cause the disease by pulling violently with one arm, must certainly exert the tractile force high in the back by means of the trapezius and rhomboidei muscles; and females of boarding-schools exercise chiefly one arm, all which certainly favors the idea that, in such cases at least, the dorsal vertebræ are acted on by these muscles, and are drawn into a curve. It is probable, therefore, that the curvature may begin in either the back or in the loins.

When the curvature appears in one of these places, a compensatory one follows in the other place, giving to the spine the appearance of the letter *S*; and when a large lateral curvature occurs in the middle of the spine, there will be two smaller compensatory curves, one above and the other below, which will give to the spine the appearance of the Greek letter ζ Zeta.

Prognosis.—This requires caution. If the distortion come on between 8 and 14, and after one of the exanthems, as measles or scarlet fever, it may be considered as curable. If placed under early treatment, and especially when it is attributable to a known cause, as constrained posture or seclusion, which can be obviated; if the curve be in a gentle waving line, and not acute, and its convexity, if between the shoulders, is to the right side; if no constitutional cause preceded it; if little severe pain is felt; if no other disease or distortion exist that tends to keep it up; if no ankylosis has formed; all of which points are easily ascertained, there is every reason to hope for a cure. On the contrary, if the disease commenced in early years, and has existed for more than a year or two; if the patient exhibits symptoms of a diseased lung; if individual ribs are bent or twisted or ossified together; if the spine is ankylosed; if the limbs are of unequal length or dislocated; if there are strongly marked symptoms of scrofula or rickets; if the curve be abrupt; if it originated in an injury; if the convexity be toward the left shoulder, there is less if any prospect of a cure.

Treatment of Lateral Curvature of the Spine.—Perhaps no disease has been treated so variously, I might say oppositely, as lateral curvature of the spine. One surgeon confines his patient rigorously to the same position for months; another requires certain violent exercise for years; a third rubs and shampoos; a fourth invests his patient with artificial collars, stays, &c.; a fifth attempts to replace bones alleged to be dislocated; a sixth stretches his patient on an inclined plane; a seventh pulls at head and feet, or at axilla and pelvis, with pullies and sliding mattresses; an eighth lays them on a rolling bed; a ninth opposes the curves by what he calls sigmoid flexion and extension; a tenth leeches and blisters, or applies caustic and moxa, and many advise nothing at all. Each surgeon adheres pertinaciously to his favorite plan, and adduces so much testimony in its favor that we are bound to believe they have to a certain degree all been successful. We can account for this only by supposing that there is a variety in the causes, or else that practitioners have severally deceived themselves by attaching importance to success in one or two instances, and forgetting that there are so many distinct stages in the progress of a common case, that every mode may at times be applicable. Every newly invented instrument or remedy becomes the hobby of its inventor, who, having found it suc-

ceed in two or three cases whose peculiar nature had suggested it to his mind, forthwith proclaims its virtues to the public, as adapted to nearly all cases, and, ten chances to one, writes a smart octavo embellished with plates.*

To return from this digression ; What is the best mode of treating lateral curvature of the spine ? In answering this, it will be necessary to consider it in its different stages and aspects. In the first stage, there is more or less general debility, and we will suppose a slight curvature ; the right shoulder, it may be, is slightly elevated, and the left hip slightly projecting. There is found a deviation of the spine from a plumb-line of perhaps one, two, or three inches, and in most cases an elevation or projection of the right scapula. When called to such a patient, the physician should at once obviate any known or suspected cause as far as possible ; if at school, advise immediate removal, prohibit employments that require a sitting posture, or the more frequent use of the right arm than of the left, recommend exercise in the open air, and when fatigued a recumbent posture, instead of sitting ; the back to be rubbed and shampooed or manipulated, shower-bath, and, if the season admit, sea-bathing. The exercise in the open air may be walking, games of sport, swinging, and various other gymnastic and calisthenic exercises, care being taken to use both feet alike, whether in standing or in moving about, and to preserve the standing posture no longer than is agreeable, and instead of resting the back in a sitting posture, to lie down.

Shampooing, or manipulation, consists in squeezing or pressing the muscles in the hand, and between the fingers, and kneading them with the clenched hand. The various modes of exciting the warmth of the part, and promoting a greater flow of blood to it, vary in their effects only in degree, and are to be carefully adapted in kind and extent to the circumstances of each case ; but generally they are to be continued not less than an hour, and repeated twice

* The multiplicity of these books published in England alone, within the last ten years, is truly astonishing. In the short space of the two last years, not less than a dozen separate works have appeared, having nothing to recommend them over books already in the market, but some contrivance, or some alteration of a former one, for stretching and sustaining the body, all of which might have been published in two or three pages of some medical journal. Our own country, so far from being surfeited with such books, has not yet produced a single volume, or even a reprint of one, upon spinal distortion ; and it is to be hoped that the subject will be delayed still longer, in order that the vast number of machines and remedies now in use in Europe and this country may be fairly tested, and their respective merits and adaptation to each variety of case well ascertained.

or thrice during the day, or as often as the patient can bear. The faithful application of this remedy, in conjunction with warm fomentations, which regular practitioners have neither time nor inclination to apply, has given great celebrity to a few individuals, called natural bone-setters. It would be well in large communities to have a few persons in the capacity of nurses initiated in the practice of shampooing or manipulating, as is the case in Edinburgh.

To the foregoing mechanical means should be added cold sea-bathing during the summer, and frictions with salt and brandy at other seasons. Internally should be exhibited ferruginous preparations in such form as can be best endured, and other mineral tonics, with such mild vegetable tonics as the patient can bear.

In the second stage, when the deviation is more considerable, and the ligaments, inter-vertebral substances, and muscles, are supposed to be materially changed from their normal state, and especially if it be rapidly increasing, the good effects of exercise in an erect posture are not so certain, and the distortion is more likely to resist all the common remedies above mentioned. The head and shoulders weigh upon it with more effect in proportion to the increase of curvature, and require to be sustained by artificial support, to prevent the exercise from proving injurious. The instruments contrived for this purpose are numerous, but they consist of such supports as are adapted to rest on a leather or metallic cincture reposing on the bones of the pelvis, and press upward against the axilla, like crutches, or a shaft may extend, from the cincture resting on the hips, along the spine and above the head, and by means of straps under the occiput and the chin, united on the vertex of the head, and made fast to the spinal shaft, effectually take off the weight of the head and shoulders from the curve during exercise. Drs. Mitchell, Kissam and Abbie have each invented, or have improved, instruments having this object in view. They are so contrived as to admit of both a turning and a nodding motion, and to allow free exercise, and are intended to be laid aside when the patient lies down. Such modes of support are preferable to splints with girths round the body, which compress the dorsal muscles.

The dorsal muscles may be exercised by having a strap under the chin, and passed over the vertex, and there fastened to one passing in like manner from the occiput, the two being made fast to a cord extending over a pulley in the ceiling, having a weight at the other

end. The patient may, in a sitting posture, a few feet distant from the pulley and facing it, draw the head backward and allow the weight to pull it forward again, and by thus repeating this nodding motion may exercise and strengthen the dorsal muscles, while at the same time he is straightening the spine. Swinging by the arms, or by the head and arms, and lying on an inclined plane, with suspending bandages under the arm-pits, are worthy of a trial; and in bad cases Mitchell's supporter, or Kissam's chair, or Guérin's bed, may be resorted to, with certain encouragement of benefit. All the local remedies and manipulations recommended in the first stage, as well as internal remedies, should be most thoroughly tried.

If the distortion depend on a contraction of the dorsal muscles that resists its return to a straight line, it may be necessary to divide them, as hereafter described in Guérin's plan, but this should rarely be done.

In the third stage we may suppose the bony structure much changed. The curve having increased and existed a long time, the bodies of the affected vertebræ become wedge-shaped, from side to side, the ribs and sternum are distorted, and the hip of the opposite side projected. I would here recommend that the patient be carried to an orthopedic establishment, as the most sure, if not the only way for a recovery. Parents and nurses in private dwellings will neglect to follow out the necessary plan of treatment, in all its details, and the physician himself will hardly be able to select and rightly time the various remedies that the case may require. All the means advised in the second stage must be rigidly persevered in, with the addition of other contrivances for compressing and restoring the spine and ribs to their normal state, by parallel extension with lateral pressure, or by Guérin's bed for sigmoid flexion and extension.

The means for parallel or lengthwise extension are applied by belts placed round the pelvis, and round the upper part of the trunk in the axillæ, to which ropes are attached that pass over the head and foot of the bed, and have weights appended there. Another cord may in like manner extend from the head to a pulley and weight. The rolling-bed of Shaw is made with a surface of elevations and depressions, adapted to meet and correct distortions. Also, there is a bed consisting of two cushions to which the patient is fastened, and which are drawn by weights and pullies attached to them at the head and feet, the patient's curvature being at the place where the cushions are drawn asunder, and a bed constructed with an inclined plane

is sometimes used. These and various other contrivances for extension and lateral pressure have been invented, and might be described if time and space permitted; but I think they all fall short in their efficacy of Mitchell's moveable supporter, Kissam's chair, and Guérin's bed for sigmoid flexion and extension, each of which I shall now describe.

Dr. Mitchell's moving supporter, represented in the plate, is very serviceable, as it enables the patient whilst suspending the head and shoulders and straightening the spine, to take exercise by walking about the room. I witnessed the decided improvement that attended its application in a comparatively very short space of time. A useful improvement would, however, be a spiral spring extending from the vertex of the head to the crane above. This would break the shock which might otherwise be given to the neck by taking a false step when suspended by the head.

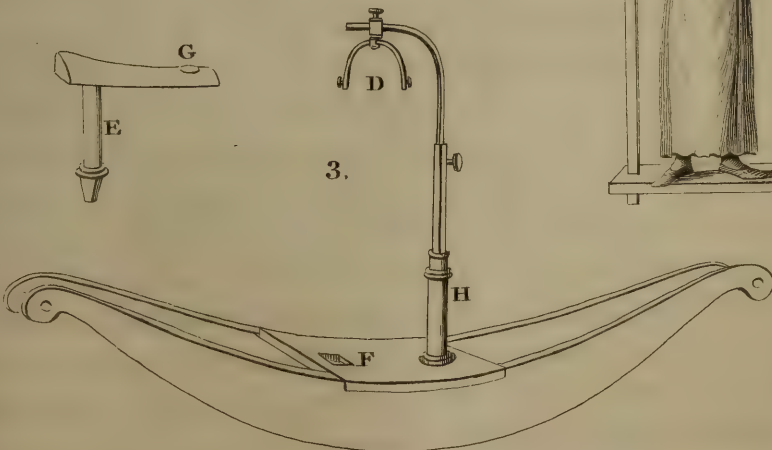
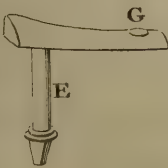
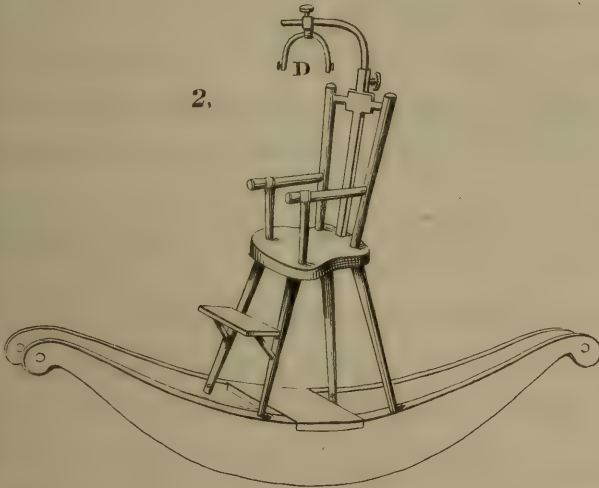
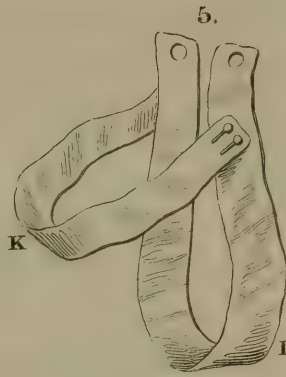
Fig. 1. A, a crane inserted in a socket, having a thumb screw, B, to fasten it when raised or lowered to suit the height of the patient. This socket is made fast to the encircling wood, C, which opens with a hinge for its entrance, and is supported by four legs with large castors to move about on. D is an iron supporter suspended by a swivel to the crane, and to which the head-pieces I and K, made of soft leather, are attached.

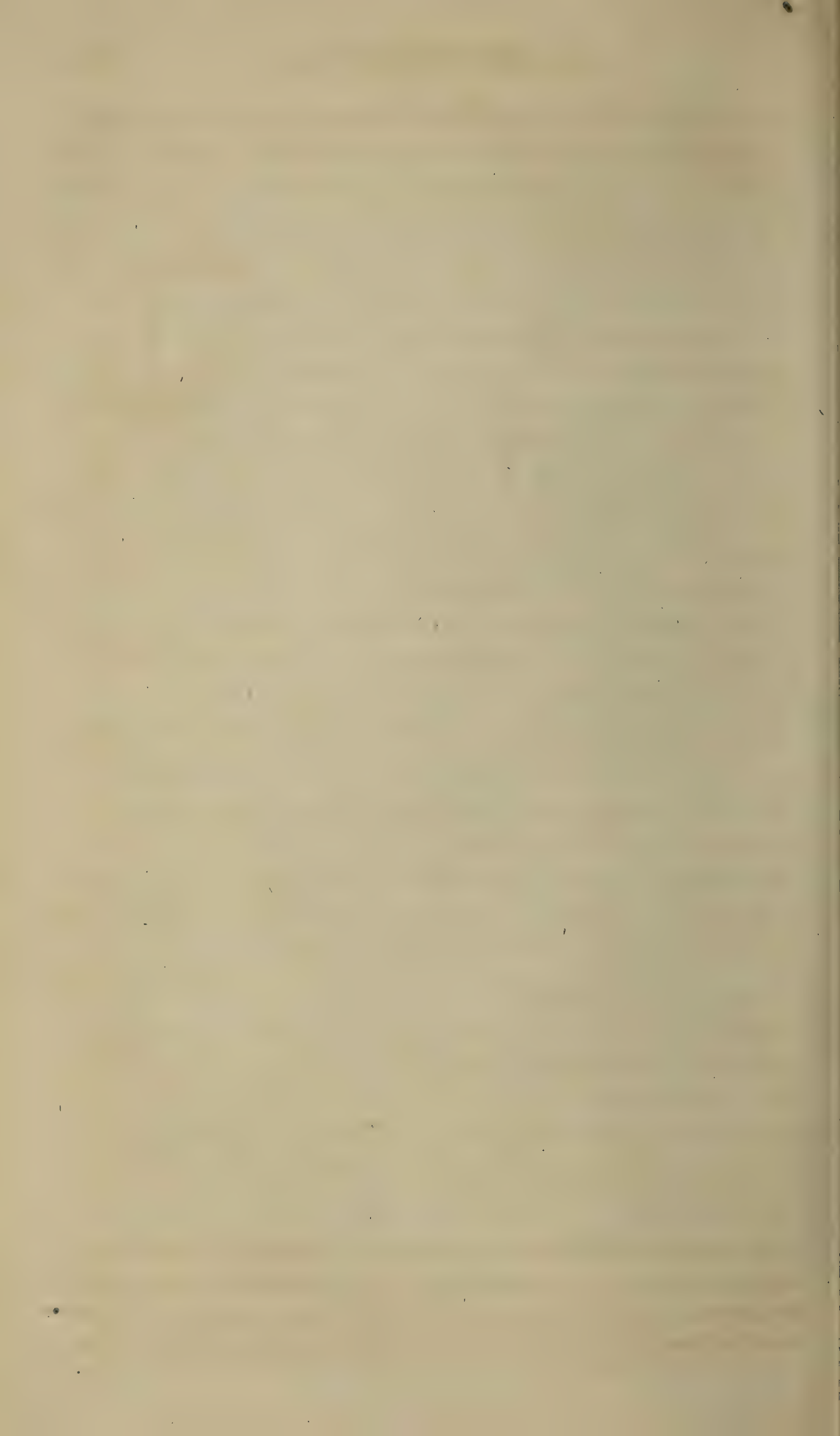
Fig. 2 represents a rocking chair with like contrivance about the head.

Fig. 3 represents a rocking horse, E and G being inserted at F to ride upon.

Fig. 4 represents a swing, L being a roller.

Dr. R. S. Kissam, of New York, has invented an apparatus for correcting lateral curvature, which possesses great merit. It is a chair which combines the essential properties of *extension* of the spine, *contra-flexion* of its curves, and of *pressure* upon the abnormal projections of the ribs and scapula, at the same time it permits the patient to enjoy a sitting posture so as to read and sew. An important accompaniment to this would be a bedstead and mattress, representing an inclined plane, on which the patient might sleep, having a pulley extending from a belt under the armpits over the head of the bed through a pulley to an appended weight—the gravitation of the lower part of the frame during the night would keep up a constant slight extension upon the curve.





Kissam's Chair.

Explanation of the Cut.—*a a.* At the back of the chair are tubes containing spiral springs, the power of which are increased at pleasure by screws at the bottoms of the tubes.

d. Continuation of the back of the chair fitting into *a a.*

c. Arms for embracing the ribs, to support the body—resting on and attached to *d*. When *c* is adjusted by means of a strap, and the patient sits down, the weight of the body is thrown upon the springs contained in *a*, and the spine is constantly extended by their action.

b. Braces on which the arms are fastened, are so contrived, revolving on *d*, as to exert any desirable amount of pressure on the angular ribs of the convex side of the patient.

The junction of *d d* with the crosspiece at the top, are so made as to allow of motion; either side may be elevated or depressed, to assist in contra-flexure.

g g. Two springs fitted in the seat, adjustable to a given height.

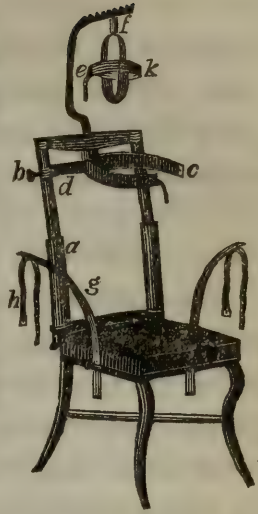
h h. Straps to encircle the body, and attached to *g g*, the upright springs.

The springs *g g* produce contra-flexure, by acting on the convex sides of the curves of the spine.

e. A crane to which is attached *k*, the head piece, which is placed under the chin and buckled around the head; thus any force applied in extension acts equally on the occiput and chin.

f. A tube containing a spiral spring, which constantly extends the spine from the shoulders.

When seated in this chair the patient is at perfect ease; the spine is extended, and is bent in a contrary direction to the diseased condition. No organ is in the least disturbed in its action, and the circulation especially is not obstructed. The patient is at liberty to converse, read, sew, or amuse herself in any way not incompatible with a sitting posture.—*Lancet*.



An important addition to the chair of Dr. Kissam, would be large castors or swinging wheels under each post—which would enable the patient, with the aid of a staff, to roll about the room. Or the chair bottom might rest on the axle of two wheels of two or three

feet diameter, and having a third small one behind the chair to support and steady it. The patient might roll such a chair about in any direction by turning the two wheels with the hands applied to their rims. Such chairs are commonly used by patients affected with palsy, but have not, to my knowledge, ever been connected with a suspensory apparatus like Kissam's chair.

Guérin's Bed for Sigmoid Flexion and Extension.

The author commences his description of this by remarks on the various European machines that had preceded, and admits that they did good to some extent. He then enters on a mathematical calculation of the force of traction necessary to reduce a curve when applied at the head and heels, and at the two extremities of the spine by fixing the head and shoulders and drawing as directed in using several beds. He concludes that 83 per cent. of the tractile force is expended in stretching the vertebræ one from the other by overcoming the resisting ligaments, muscles and fibro-cartilages which unite them, and that the effect of a given force of extension in diminishing the curve lessens continually, till it finally becomes inoperative before the spine is straightened, and that hence arises the difficulty complained of by many authors of removing the last degrees of spinal curvature. The ill effects of such strong extension are weakness of the bonds of union of the vertebræ, and a tendency to relapse into a still greater deformity. Besides which, the great efforts made to remove the last degrees of deformity have also the tendency to efface the *natural* curvatures of the column as presented in profile, which are necessary to the firmness of standing, and to the graceful figure which should mark the female form.

He begins his description by comparing the curved spine to a staff with a bend in it, and proposes to straighten it on the same principle, not by pulling lengthwise at each end as is usually done with a curved spine, but as he would straighten the staff by seizing fast the two ends with the hands and pulling the convexity of the curve against the bent knee, so would he fasten the spine in a straight horizontal position, and bend the trunk in a direction opposite the curve by fixing a firm prop against the prominent convexity and bending the body against it by force applied above and below it. Furthermore, as he would in straightening the staff bend it beyond a straight line, in order that its natural elasticity might not reproduce the curve, so in applying force above and below the spinal curvature he would cause it to produce one in an opposite direction, and thus render the

spine perfectly straight, which those who trust to extension alone fail to do.

Guérin's apparatus consists of a couch divided into three portions, a small one resting under the curvature, another larger one to support the head and shoulders, and a third the hips and lower extremities. These are so connected together as to admit of being turned one upon the other. The body being laid straight upon this and confined in every part, the head and foot of the couch are turned from a straight line to a curve opposite to that of the patient's spine. This is done by a ratchet and other apparatus which it would be difficult to describe on paper, and which is rendered unnecessary by the fact that several of Guérin's beds are in use in the orthopedic establishment of Dr. Brown of Boston, which may serve as models to make others by, and Dr. Mott of New York is supplied with them.

There is perhaps no contrivance for correcting curvature of the spine, whose value has been tested and promulgated under the authority of so imposing an array of names as Guérin's bed. Eight of the most distinguished surgeons of the Royal Academy of Medicine examined its construction and watched its effects on ten patients who were subjected to its trial, who reported as follows.

The first patient was aged 6 years, affected about two years ago with lateral deviation of the spine, with curvature of lower limbs, and lateral flattening of the chest; had followed no treatment. Fourteenth of January, 1836, she presented the following condition. A lateral dorsal deviation to the right, 7 inches of flexure, 3 curves. The upper curve, to the left, occupying the cervical and first dorsal, had 3 lines of flexure; the middle, to the right, in the middle dorsal, 5 lines; the lower, to the left, in the last dorsal and the lumbar, 6 lines. Height 36 inches 2 lines; general health poor, general rickets.

After 14 months' treatment, the spine was to all appearance straight; there were, however, some traces of torsion of the vertebræ; the subject had grown 2 inches 7 lines; general health excellent.

Second patient was aged 8 years, affected about 18 months with right lateral deviation, had had no treatment. At first she presented a lateral deviation in the middle dorsal, to the right, with one inch of flexure, with 3 curvatures, the upper and lower almost insensible in the direction of the spinous processes. Height 40 inches 10 lines; health weak.

Fourteen months after, the deviation was reduced to about one line; height increased 2 inches 3 lines; health excellent.

Third patient was aged 8 and a half years, had a lateral dorsal de-

viation to the left, with rickety curvatures of the limbs, and lateral flattening of the chest. The deformity was from birth, increased 6 years, then became stationary.

At first, presented a lateral deviation in the middle dorsal, to the left, 9 lines of flexure, with 4 curvatures and very considerable twisting of the column. First curvature occupied the last cervical and the first dorsal, flexure 2 lines; second, from 2d to 8th dorsal, flexure 7 lines; third, from 7th dorsal to 2d lumbar, flexure 2 lines; fourth, occupying the rest of the column, was insensible in the direction of the spinous processes. The surface of her back was very irregular, and the general appearance indicated a very old and deep deformity. Height 37 inches; general health bad.

Fourteen months after, the deviation had lessened one half; height increased one inch; health a good deal bettered.

Fourth patient, aged 9, had a lateral deviation of 4 or 5 years' standing, and ever since increasing.

At first, presented a lateral deviation to the right, in the upper dorsal, of 1 inch 3 lines, with 4 curvatures. The first and last were almost insensible in the direction of the spinous processes; the second, to the right, from the 2d to 7th dorsal, with 10 lines flexure; the 3d, 8th dorsal to 2d lumbar, 8 lines. Height 43 inches; health good; there was no other deformity.

Fourteen months after, the column was straight; there was little difference in the projection of the shoulders; height was increased 3 inches; general health very good.

Fifth patient, aged 12, had quite an inclination of the head to the left, with rotation to the right, and two curvatures, succeeding the deformity of the neck. This affection was developed as the sequel of scrofulous abscesses, of which the cicatrices had caused retraction of the skin, and left sterno-mastoid and platysma muscles; the deformity was considerable, and the left side of the head almost touched the summit of the shoulder. General health was very bad; there was many months ago an intense scrofulous ophthalmia.

Fourteen months after, the head was completely brought straight; the sides of the face being unsymmetrical still showed marks of deformity; but the axis of the head and neck was completely identified with that of the column; the supplementary curvatures of the spine had wholly disappeared; general health was excellent.

Sixth patient, aged 12, had 3 years since a lateral deviation in the lower dorsal to the left. At first, it had a flexure of 8 lines, and con-

sisted of 3 curvatures. The first, to the right, occupied the first 7 dorsal ; flexure 3 lines ; the second, to the left, occupied the 5 last dorsal and the 2 first lumbar ; flexure 7 lines ; the third, occupying the last lumbar, was 3 lines ; height 47 inches.

At the end, the spine was straight ; the two sides of the back symmetrical, and height increased 3 inches 2 lines.

Seventh patient, aged 14, had since birth a lateral deviation of the dorsal and lumbar, to the right, accompanied with a club-foot.

At first, the deviation amounted to 12 lines, and had 3 curvatures ; the first, to the left, occupied the first 6 dorsal ; flexure 3 lines ; the second, to the right, occupying the 6 last dorsal and 2 first lumbar ; had 8 lines of flexure ; the third, to the left, occupying the rest of the spine, had 4 lines of flexure.

At the end, no trace was left.

Eighth patient, aged 12 years, had had 15 months a lateral deviation following a long intestinal disease.

At first, a lateral deviation in the dorsal and lumbar, to the left, 9 inches flexure, 3 curvatures. The first, towards the left, in the last cervical and 2 first dorsal ; flexure 3 lines ; the 2d, to the right, from 3d to 9th dorsal ; flexure 5 lines ; the 3d, to the left, occupied the last dorsal and the lumbar ; flexure 7 lines. Height 50 inches ; health weak.

At the end, the column was wholly restored. For 8 months it has remained straight ; health greatly strengthened ; height increased 3 inches 5 lines.

Ninth patient, aged 14, lateral deviation, with lateral flattening of the chest, dating from 2 to 3 years, preceded in infancy by curvature of the limbs.

At first, a lateral deviation in the dorsal and lumbar, to the left, of an inch in flexure, with 3 curvatures. The 1st, to the right, comprising the 6 first dorsal ; flexure 3 lines ; 2d, to the left, 6 last dorsal, of 6 lines ; the 3d, to the right, occupying the last lumbar, was appreciable only by the torsion. Height 49 inches 3 lines ; health very weak.

At the end, no deformity remained ; height gained, 4 inches one line ; health grown better.

Tenth patient, aged 17, had a deviation of the 3d degree, with considerable projection, of 9 or 10 years' standing, following a violent blow on the back.

At first, a lateral deviation in the middle dorsal, to the right ; flex-

ure 19 lines; 3 curvatures. The 1st, to the left, in the last cervical and 3 first dorsal; flexure 5 lines; 2d, to the right, from fourth dorsal to first lumbar; flexure 15 lines; 3d, to the left, last 4 lumbar; flexure 10 lines. Height 58 inches; health good.

The first curve was wholly effaced; the second reduced to 10; third, to 5 lines; projection lessened; height increased 2 inches one line; general health excellent.

The Report summed up these cases as follows:

Five, complete cures; 2, nearly complete; 2, considerable improvement; 1, slight improvement. All this speaks favorably for Guérin's bed, but after much inquiry and experience, I am persuaded that equally favorable results would have followed the treatment by other mechanical contrivances, with appropriate constitutional and local treatment, used actively and perseveringly. The chair of Kismam, with some modifications, evidently combines the essential mechanical advantages of Guérin's bed. Neither of these, nor any other machines, are however alone sufficient to effect cures. Exercise, frictions, manipulations, tonic baths, the internal use of ferruginous preparations, and other tonics, are also essential remedies.

Operation for the Cure of Lateral Curvature of the Spine.

Within a few years, an operation has been proposed and performed with success, which will in some obstinate cases assist other remedies in effecting a cure that would else baffle every mode of treatment. It consists in dividing certain muscles with their fasciæ and tendons, which from their contracted condition perpetuate a curvature, in spite of all the ordinary means used to overcome it. There is some difference of opinion as to the originator of the operation, but it must be conceded that M. Guérin, of Paris, was the first to venture upon it boldly. He divides such muscles of the back and loins as appear in a state of tension, and sometimes extends his incision through the trapezius and rhomboidei along near their origin from the spine, and parallel with it, to the length of five or six inches, and at the loins through the common mass of the sacro-lumbalis and longissimus dorsi. "In all these operations," he remarks, "I have divided the muscular bundles, the aponeuroses, the tendinous sheaths, the vessels and nerves. In some cases there has formed a very considerable effusion immediately under the skin, and between the lips of the wound. I have," he adds, "closed the little orifice

at each dressing with a morsel of diachylon, and when the effusion has been considerable have made moderate pressure on the external swelling. All patients thus operated on, have by the third day been able to get up and walk, and to submit to mechanical pressure intended to correct the deviation of the spine, now released from the cords that held it."

He considers it as an established fact, that divisions of the muscles, cellular tissue, nerves, tendons, and vessels of small calibre, provided the incision be made under the skin, and air be carefully excluded, are exempted from inflammation, and that an immediate re-organization is effected somewhat after the manner of union by the first intention.

There are instruments invented specially for this operation, which bear some resemblance to a bistoury, but are much smaller and longer, the blade or cutting part being an inch or two long, and continuing in the form of a wire four or five inches, of the same width as the blade, to the handle. These instruments, after the model of those used by Guérin, are to be had in New York and Philadelphia.

Child's manner of operating.—"The plan I usually adopt, is to place the patient on my extension couch, or to raise her by means of pullies which I have fixed for this purpose. A cap should be provided, made with strong webbing. One band must pass in a circular manner round the head, and fasten beneath the occiput with a buckle, whilst another of the same material should encircle the sides of the head and face, the chin being received into a hollow made for that purpose. Where these bands meet on the vertex of the head, a strong loop must be attached, which, when extension is made, must be hooked into the cord which passes over the pulley, and in a very gentle manner the body is to be raised from off the ground. If by any of these means the spine is observed to move toward the mesial line of the back, the operation may be undertaken with every prospect of success; but if, on the other hand, the spine appears rigid, and betrays no symptom of mobility, we must be wary in raising hopes that can never be realized, by submitting the patient to a useless, although simple operation.

In the treatment of lateral curvature of the spine, under our present notice, there are three points to be considered: first, to release the spine from the power which retains it in its abnormal situation; second, to restore the vertebræ to the spinal line of the back; and

third, to prevent these bones from again relapsing into their unnatural situations.

The first of these is attained by a very simple operation, namely, by a division of the contracted muscles.

There are two modes of effecting this division. Thus, for that description of curvature which comes under the first division of our subject, in which the trapezius and rhomboid muscles have suffered from inordinate action, their division must be effected in the following manner:—

The patient being placed in a prone position, with the chest elevated and head hanging over a table, tension of the trapezius and rhomboid muscles must be made by drawing the affected shoulder upwards and outwards. A straight narrow bistoury of sufficient length is then to be introduced, at a point corresponding with the greatest convexity of the curve, and to be passed carefully upwards, with its flat surface between the skin and posterior surface of the muscles, and as close as possible to the spine, until it has reached to about the superior angle of the scapula; by a semi-turn of the handle, its cutting edge will then be brought in contact with the trapezius muscle; it is then to be withdrawn, care being taken that a complete section of the trapezius and rhomboid be made close to the spinous processes of the vertebræ. By observing this latter direction, we shall avoid much loss of blood. Having completed this section, the bistoury must be again introduced into the same opening, and carried downwards in a similar manner, withdrawing it as before, and taking care that every portion of these muscles be separated from their spinal attachment.

In the above operation there need be no apprehension of hæmorrhage, as the only artery of magnitude traversing these muscles is the posterior scapular, which, if proper precaution be used, need never be wounded.

For those which come under the second division of our subject” (lumbar curvature), “the operation is, if possible, still more simple. For these a transverse section of the lumbar muscles is to be made, and on the side corresponding with the convexity of the dorsal curve. The wound need not be more than a quarter of an inch in depth” (this must depend on the thickness of the cellular substance), “the most important point being to secure a complete division of the vertebral aponeurosis. The operation may be accomplished in less

than thirty seconds, with the most trifling loss of blood, and the patient, if possessing moderate courage, complains of but little pain, and is enabled to walk to bed.

The operation may be performed in the following manner. The patient being directed to bend forwards, a straight, narrow bistoury must be passed between the skin and vertebral aponeurosis. A retraction of the muscles immediately takes place, leaving a space of at least half an inch between the divided surfaces. A small piece of adhesive plaster must be placed over the wound, which need not be more than the eighth of an inch in extent, and a compress applied, well secured by means of a roller. The patient should then be placed on a hard mattress on the face, and kept in this position for three or four days. The wound will generally heal in less than a week, and no further inconvenience will be felt.

The operation will, of itself, remove the lumbar curve when present, without any further interference; but as far as the dorsal curve is concerned, although it will be considerably diminished, yet must only be regarded as one important step towards a permanent cure.

The patient being allowed to rest about a week subsequent to the operation, we must then have recourse to such means as will assist nature in repairing the distorted vertebræ.

The position in which the patient lies should be our first consideration. After the time above specified has elapsed, the prone position should be changed, and a folded pillow placed in apposition with the dorsal curve, and in such a manner that the patient lying on the side, with the upper and lower extremities bending over it, the intercostal muscles on the opposite side are kept upon the stretch, and the ribs separated from each other. The patient should then be induced to grasp with the left hand a rope suspended from the ceiling, and at such a distance from the rhomboid and trapezius on the stretch, and at the same time endeavor to bring the arm to the side. By this latter movement, these muscles are thrown into a state of activity. This should be repeated frequently during the day."

He then recommends extension, preferring his own couch, which consists of a belt round the pelvis having a line attached running over the foot of the bed to weights which are appended, and at the head of the bed three pulleys, with lines leading to the head and two shoulders, and made fast to a cap fixed under the chin, and the straps under the arm-pits, weights also appended to the other extremities of the lines. Pressure is to be applied to the convexity by the hand,

which is to follow each act of respiration, care being taken to handle the ribs gently ; and thirdly, friction along the back with some stimulating embrocations, and the judicious arrangement of well-regulated forms of exercise. The patient should not be permitted to sit up or walk about after the operation, without wearing some kind of support ; and if great care in this particular be not observed, much risk will be incurred of the spine relapsing into its former situation.

When a curvature exists for some time, one or two more will ensue, as a means of restoring and preserving the centre of gravity, and as before observed, are to be considered as compensatory. Now the effect of removing the first large one, whether it be in the back or in the loins, by the operation, will be to correct the others by the same tendencies that produced them, to wit, the efforts of the muscles to restore the equilibrium in the new condition of the spine.

I have purposely omitted to include in the foregoing cases ulcerations of the bones, as causes of lateral curvature, whether proceeding from local injuries or from constitutional causes. In these, anchylosis must be the aim of the surgeon, to procure which he will prescribe entire rest in a recumbent posture, stays in the form of splints, cuirasses and other artificial supports,—to allay inflammation, cupping and leeching,—and to arrest the ulcerative process by issues, setons, &c. In no other kinds of lateral curvature ought these counter-irritants ever to be used. Among the best are veratrine and iodine ointment. If the disease is founded in scrofula, the internal use of iodine ; if in syphilis, mercurials, alteratives, and diaphoretics, as decoction of the woods and syrup of sarsaparilla.

In all bad cases of lateral curvature, it is advisable, before commencing a regular and systematic course of treatment, to take a cast of the figure in plaster of Paris, and to repeat this in two or three months, or as soon as a change is known to have been produced. Such casts furnish accurate information as to the amount of distortion, and the progress made in relieving it, and afford satisfaction to the patient, as well as encouragement to persevere. In slight cases, a blotting paper may be applied along the whole length of the spine, and dotted over the centre of each spinous process, and a plumb-line may at the same time be marked, to show exactly the amount of curvature that may exist ; and this may be repeated at even shorter intervals, by re-applying the same paper.

The average rate of improvement, in cases where the lateral deviation is an inch and a half or two inches, is half an inch the first month,

and an eighth of an inch every succeeding month. In rare cases, Mr. Ward thinks he has done better, when the subject was young, and the progress of the disease rapid. He admits, however, that he does not by any means restore lateral curvatures perfectly straight in all cases—that under the best means he could use, “many would diminish one half or two thirds, or to within a quarter of an inch of straight, beyond which point no advance could be made, however faithfully applied, although there was no disease of the bones.” Had he however combined the sigmoid extension of Guérin, or adopted it after trying his own plan, he would have produced an entire straightness with more certainty,—an important point, since the nearer the spine is brought to this by treatment, the less liable will it be to relapse.

There will occur in bad cases of lateral curvature of long standing, ankylosis of the vertebræ, and sometimes of the compressed ribs. In all such cases, the patient must be content with palliatives in the form of supports, as any attempt to stretch the spine can do no good, and may produce serious evil. Among the signs of an anchylosed state of the vertebræ will be the unyielding nature of the curve, when the hand is placed on the convex side, and also its fixedness when the head and shoulders are bent back or forward as far as possible.

ANGULAR PROJECTION OF THE SPINE ; COMMONLY CALLED HUMP-BACK.

Arranging spinal distortions in the order of their frequency, we come next to consider *hump-back*. This results from the loss of structure of a part of one or more of the bodies of the vertebræ, which form the anterior support of the spinal column. This produces a sharp projection backwards, with more or less irregularity in the shape of the chest, elevation of the shoulders, spreading out of the ribs, the false ones being everted by the upward pressure of the abdominal viscera, and thus producing the appearance which is called *chicken-breasted*. There is also a wasted condition of the parts below the distortion. The deformities will however depend much on the nature and position of the disease in the spinal column. If in the dorsal vertebræ, the chest will be flattened, either at its anterior surface, or laterally, or one side may be more compressed than the other. If seated in the cervical vertebræ, the chest will be flattened, and the sternum drawn downwards and inwards, and, on account of the inaction of the scaleni muscles, there will be difficulty of breathing. Ordinarily the most striking mark of hump-back, on viewing

the patient in front, is an elevation of the shoulders towards the ears. Should the lumbar vertebræ be the seat of the affection, the chest settles down towards the pelvis, so as sometimes to bring the ribs in contact with the crest of the ilium.

The disease is not, like lateral curvature, confined to females mostly, but attacks both sexes alike. It appears much earlier in life, most commonly before the fifth year; and it is more likely to run in families, from the fact that a tendency to it is often founded in scrofula.

The disease, however, arises from three causes: caries of the bodies of the vertebræ, ulceration of the interposed cartilages, and a scrofulous condition of the spinal column. In most cases the disease is dated by the patient or its friends to some external injury, as a fall, or blow, or some sudden shock or jerk. Three cases are now present to my mind, where a child fell upon the floor at the age of three years, one that was hit by a brick-bat, one that was kicked in the back at school, two that strained their backs in jumping, and several others who are unable to assign any such injury.

It is apt to be attended at an early period with numbness of the limbs, or an uneasy feeling, pain in the back, great difficulty in ascending a hill or stairs, palpitations, oppressed breathing, and pains in the head. As the disease advances, the parts below become more or less paralyzed, and the sphincters lose their power. In some cases the patient will be able to stir about for some time after the accident, as if nothing had happened; in others there is an immediate attack of benumbing pain in the back, and total loss of muscular power. The disease often ends in ankylosis, and the patient is apparently well for life, although the deformity is very considerable. It is the opinion of Mr. Shaw and others, that paralysis is not always proportioned to the amount of pressure on the spinal marrow. Dr. Hunter attended a patient who was able to walk to the day of his death, and was free from palsy; and yet there was an evident encroachment of one of the vertebral bodies upon the spinal marrow, compressing and diminishing it to half its natural size. Mr. Hunter says that had he not carefully watched every symptom of the disease, he should have thought, from the state of the preparation, that all the parts below compression must have been paralyzed.

Treatment.—Some difference of opinion has existed as to the best mode of treating angular projection,—less so, however, than that of lateral curvature. Mr. Pott's writings have had higher authority and

influence with the profession for many years than any person's. His name is so identified with it, that on the continent this form of distortion is called the "*maladie du Pott*." He was the first to give an accurate account of its pathology, and his system of treatment, making allowance for peculiar cases, and for some new medicines that have been since discovered, is on the whole the best that has been proposed. It is nearly all comprised under the head of counter-irritation, as issues and blisters. Unfortunately, Mr. Pott's high authority, and the general deference paid to him, have swayed the profession into the belief that all kinds of spinal distortion should be treated with counter-irritants indiscriminately; and hence an egregious error has been committed of late years, in inflicting issues, setons, actual cautery, moxa, tartar emetic ointment, and every torment of the kind that physicians could lay their hands on, until these remedies have fallen into disrepute in all kinds of distortion.

The leading indications are to prevent the increase of distortion as soon as possible, to stay the progress of ulceration of the vertebræ, and to produce ankylosis. The first is answered by taking off the super-incumbent weight from the part diseased, either by assuming a horizontal position or by artificial supports. In lateral curvature, a dorsal recumbent position was recommended; but in this a facial one is preferable, as it not only removes the pressure of the head and shoulders, but prevents the abdominal muscles from contracting and drawing the sternum towards the pelvis, and if the sternum projects, as it sometimes does, the weight of the body will compress it.

It is necessary to avoid violent shocks and sudden motions. I have known a child apparently cured with a small hump, who broke up the ankylosis by falling whilst running, and thereby caused death. For the same reason, strong extension should be avoided.

In all cases of angular projection there is a tendency to suppuration, which our best directed efforts cannot always prevent. This may point in different parts of the spine, or descending into the pelvis may appear by the side of the tuberosity of the ischium at the groin, or like lumbar abscess under the fasciæ of the thigh. It never breaks into the large cavities through the pleura or peritoneum. But it is not uncommon for it, when the whole body of the vertebra is destroyed, to press on the spinal marrow and produce paralysis,—or, the inflammation, extending from the bones or intervertebral cartilages to the coverings of the spinal marrow, may produce the same effect,—or lastly, the acuteness of the angle formed by the entire

destruction of two or three bodies may cause a bony compression of the spinal marrow. Hence it is that we so often find numbness and emaciation of the lower extremities, accompanying angular projection. Nature, however, makes wonderful efforts to overcome the paralysis. Mr. Abernethy used to exhibit a patient in St. Bartholomew's Hospital, that recovered after being paralyzed more than two years; and Baron Larrey was fond of showing a skeleton where the like effect existed a still longer time, but yielded as he thought to moxa,—three lumbar vertebræ being destroyed, and the contiguous ones united by ankylosis. Surgical aid should be called early, and all exercise suspended. A chronic inflammation caused by the accident is progressing, and will end in caries of the bone, or ulceration of the interposed cartilage, and consequent angular projection. If ulceration begins in the centre, side or anterior part of the intervertebral substance, it very soon comes in contact with the bone, and produces a disease of its cancellated structure.

“Lateral curvature may also result from this cause, for when the centre of the intervertebral substance is the primary seat of the disease, it may extend itself either forwards or sideways, and would therefore produce two different results, viz. angular projection when the anterior part of the bone participates in the disease, and lateral curvature when the sides of the bodies of the vertebræ are affected.”
(*Tuson.*)

Mr. Tuson gives a view of Mr. Venal's apparatus with a patient upon it, which allows the person a convenient table for his book or plate; by a similar arrangement a young lady might play upon the piano. The contrivance may be useful in lateral curvature as well as angular projection.

The *spinal reliever*, of which several kinds have been invented by Shaw, Abbie, and particularly that of Mitchell and of Kissam, will be of service in some cases; while it is worn, the deformity cannot increase, the weight of the head and shoulders being entirely taken off. In this case it is that the cuirass is valuable.

In very young children, as also in others, some advantage will be gained by wearing a small busk when not on the inclined plane. It should be firm and thin. In a recent case, where the disease came on when the child was only two years old, and where every thing looked discouraging, a cure was effected by wearing splints, in connection with other treatment. Suppuration advanced, and a large quantity of sero-purulent matter was discharged spontaneously at the

thigh ; yet the recovery was complete, with anchylosis of two or three vertebræ, and with some projection. This the surgeon should always expect, and should inform the friends accordingly. Any attempt to extend the spine, as recommended in lateral curvature, might defeat the efforts of nature to form anchylosis, which is the only mode she takes to effect a cure. The utmost that can be safely done in this way is to take off the superincumbent weight, to preserve the diseased bones in apposition and quiescent, until a gelatinous substance is deposited in the diseased part, followed by osseous matter, that fills up the space of bone and cartilage, producing anchylosis. Hence the importance of rest and a recumbent position.

The second indication is to arrest the morbid tendency of the bones to caries, and prevent the formation of matter,—by counter-irritation. Among the best counter-irritants are caustic issues, veratrine ointment, and setons. If there be strong marks of scrofula, and especially an hereditary taint, the issues and seton are not so good as iodine ointment, and ointment of the hydriodate of potash. These may be continued on each side of the spinous processes of the projection for some weeks or even months. The discharge is to be continued for months, and the general scrofulous tendency should be treated with iodine internally in varied forms, *vinum ferri*, and *liquor potassæ*,—with frictions, ablutions, sea-water bathing, a good diet with plenty of milk.

EXCURVATION, OR POSTERIOR CURVATURE.

This comes next in the order of frequency. It differs from hump-back in being a gradual curve, such as is often seen in very old men who have suffered much from rheumatism ; and the shoulders do not rise towards the ears. Its seat is more in the dorsal and cervical vertebræ. The patient is not affected with severe pain, but there is a sense of constant uneasiness, a disinclination to move, and coldness of the extremities, sometimes paralysis. It is sometimes caused by a softness in the structure of the bodies of the vertebræ, and of the intervertebral substance, by reason of which the extensor muscles are unable to retain the column in the erect position, and the anterior muscles of the trunk bend the body forwards.

It generally appears before the age of puberty, and more particularly when dentition is in active progress, whence it has been supposed that this process has some influence in promoting its development ; it is however known to occur at a later period of life. It may

exist for years under the appellation of rheumatism in the back ; and in this state ankylosis may and often does take place, causing stiffness of the back. If the cervical vertebræ are the seat of the affection, they form an arch, the head falls forward, and the chin is brought near to the chest.

As caries with angular projection has some resemblance to excoriation, it is necessary to distinguish them. The curve is here more of a gentle swell, not angular or prominent like the other. Lumbar abscess occasionally presents a roundness, which might be mistaken for posterior curvature of the loins.

It is stated by high authority that enlarged mesenteric glands, by pressing against the bodies of the vertebræ, cause them to become softened, at the same time that they prevent the free flow of the chyle into the thoracic duct, and thus cause emaciation and diminished nourishment to the bodies of the vertebræ. In such cases the disease is founded on scrofula, and must be so regarded in the treatment, which should be by liquor potassæ, iodine, and tonics generally, with generous diet, among the best articles of which is new milk.

If the disease proceed from mollities ossium, the same alterative, tonic and nutritious course should be pursued. If founded in chronic rheumatism, frictions, liniments and stimulating plasters will relieve the pain and uneasiness. If ankylosis has not formed, there will be less risk in this disease, than there is in angular projections, in endeavoring to straighten and support the back.

ANTERIOR CURVATURE, OR INCURVATION OF THE SPINE.

This is of rarer occurrence than other kinds of distortion, and from the rapidity of its progress is more serious. It is apt to embarrass the thoracic, abdominal, or pelvic organs, according as it happens to project into either of the three organs, and it produces great external deformity. It may arise from the same causes as the other distortions, and also from rickets, mollities ossium, syphilis, scrofula, &c. It is produced in the loins by the early shortening of one limb, and by hip disease. If founded in constitutional disease, the nature of it should be ascertained before commencing the treatment. "In most cases, our diagnosis may be accurately formed from the general symptoms that accompany the primary disorder ; thus rickets may be known from some of the bones, as those of the leg or arm, being softened and bending under the weight of the body—mollities ossium,

which is very rare, from great pains over the body, feverish and scorbutic symptoms, startings, inquietude, and a copious white sediment in the urine—syphilis and scrofula, from the distinctive character of their respective diseases, which are too well known to require any particular description.”

It is unnecessary to dwell on the nature or treatment of the predisposing constitutional disease. The distortion requires, in all cases, artificial support and gradual extension. The apparatus for these should be frequently examined, as there is danger, when rickets exist, of their injuring the bones of the pelvis. Light wood splints affixed to the curve by means of rollers, are of great use in preventing extreme curvature. Cases have occurred where the back part of the head has nearly rested on the sacrum; and one of these, reported by Dr. Harrison, was perfectly cured. The plan pursued was extension by means of pads placed first between the head and the sacrum, and as soon as any part yielded to it, the improved position maintained by artificial supports, and then more extension employed till farther improvement took place; by continuing this treatment, the patient was ultimately quite restored to health and a symmetrical form.

RICKETS, AND MOLLITIES OSSIUM.

Having finished the subject of what are strictly called spinal distortions, it seems proper to advert to a disease of the vertebral column, which sometimes, but not generally, exhibits distortion; I mean rickets. The name is derived from *rachis*, or spine, and is, in technical language, sometimes written *rachitis*, or inflammation of the spine. We have already adverted to this disease as a frequent cause of incurvation, and it may be connected with other forms of distortion; but on the other hand, the spine may be shortened by rickets, without deviation of any kind, and it should therefore be considered by itself.

Rickets is characterized by crookedness of the long bones, particularly the legs, by swelling of their extremities, prominent abdomen, large head, and often precocity of intellect, by leanness, general debility, indigestion, &c. It occurs in early childhood, in damp or confined situations, under bad nourishment. Its progress and termination are variable. Some eminent men have identified this disease with scrofula, but it is very remotely connected with it, thinks M. Guérin, whose opinion is founded on 500 cases, and who has bestowed more attention on it than any other person.

It has also been confounded with mollities ossium, which it very nearly resembles ; but rickets invades the system at the age of one or two years, whilst *ramollissement* is preceded by a general vice of the system, as syphilis, scurvy, rheumatism, cancer. Unlike these diseases, rickets attacks the skeleton by fractions, one after another, and is very slow in its progress. When it has invaded the skeleton generally, it gives to it the appearance of being pressed down shorter, and the lower edge of the false ribs being everted by the shortening of the vertebral column, gives the appearance called *pigeon-breasted*.

Its morbid changes in the skeleton begin at the base, or lower limbs, so that the spine generally becomes affected after the pelvis. "It very rarely begins in the spine," not oftener than in one case out of forty, and the cases of rickety legs without rickety spine are as ten to one. The disease does not extend to the spine until it has existed in the legs about one year. Hence it may be inferred that where curvature or other distortion of the spine is not preceded by rickety legs, it is not caused by rickets. It affects the spine between the second and third year.

The *treatment* of rickets is almost wholly hygienic. Pure air, a healthy situation, nourishing diet, exercise, sea or common cold bathing, and tonics, afford the best prospect of success. The spine should be exercised by rubbing and shampooing.

LUMBAR, OR PSOAS ABSCESS.

This is a disease of the lumbar vertebræ, commonly of the anterior surface of the bodies from the outset ; at other times it begins in the soft textures contiguous to them, and extends not only to their surface, but ultimately to the cancellated structure of the bodies. Although the seat of the disease is in the lumbar vertebræ, where ulceration takes place and large collections of matter form, yet the pointing of this is various, so as to puzzle the young surgeon in identifying its nature. The matter may point at the lumbar region, at the groin, at the inner part of the tuber ischii, and under the fascia of the thigh.

The disease of the vertebræ, in these cases, may be the result of accidental sprains or concussions, by violent exertions and carrying heavy loads. It may also spring from constitutional causes, as scrofula. Abscess may form and point at the same places, when the dorsal vertebræ are the seat of the caries ; but in such cases, the di-

aphragm, if the disease be near its crura, will suffer some embarrassment in deep inspiration, and besides we may determine nearly the seat of the disease by the sensibility of the part to pressure.

Psoas abscess is characterized by unremitting pains in the loins, which are increased by exercise. Commonly the first suspicion of the existence and true nature of the disease is awakened by the appearance of a large tumor, soft and fluctuating, in either of the situations before mentioned, most generally below Poupart's ligament, which lessens somewhat in a recumbent posture, and hence is apt to be confounded with femoral hernia. There will however always be some pain in the loins, difficulty in straightening up when rising from a chair, and when lying on the back there will be a weakness felt on raising up the thigh, in consequence of the pressure of the matter on the psoas muscle.

Ordinarily the disease may progress to a fatal issue, without producing much or any distortion of the lumbar vertebræ. I have, however, seen cases that caused angular projection; the deformity, if there be any, will depend on the number and extent of the diseased vertebræ.

The constitutional derangement produced by this disease varies. I have known several persons who kept about their usual occupations, complaining little, until a tumor had appeared and existed for some time in the thigh, and after the contents of this tumor had been repeatedly drawn off. But when the disease becomes aggravated by the admission of air into the sac at the loins, great suffering ensues, hectic fever, debility, pain, restlessness, loss of appetite, profuse perspirations. In some cases there is palsy of the lower extremities. The leading aim in the cure is to effect ankylosis. To this end, the prominent indications are rest in a recumbent position, discharge of the matter, when it points near the surface, by a valvular opening of the swelling, which may be repeated as often as it fills, care being taken to prevent the introduction of air while the fluid is escaping, and to cover the opening with adhesive plaster and compresses, so that it may heal by the first intention. A frequent repetition of the opening may gradually contract the dimensions of the internal cavity, and thus tend to a cure.

The local treatment should be issues, constantly and perseveringly applied over the part affected, and strengthening plasters wherever there is room for their application. When a curvature begins to appear, spinal supports best adapted to the case may be of service.

Where scrofula is suspected to lie at the root of the evil, iodine should be freely administered. Tonics and nutritious diet will be necessary to support the strength under the constant drain. Every means that can tend to support and strengthen the system should be tried.

INJURIES OF THE SPINE.

When the spine is fractured, death usually ensues from compression of the spinal marrow. This may be produced by the displacement of a vertebra; or a fragment of the arch behind the body may be forced in so as to lacerate or even divide the marrow; or there may be an extravasation of blood that will compress the marrow; or, lastly, the theca vertebralis which surrounds it, may from inflammation swell and compress it.

It is not every case of fracture, therefore, which produces palsy immediately or soon after, that necessarily proves fatal; extravasated blood may be absorbed, and swelling may subside and liberate the marrow from compression. Nor is this all; a considerable degree of compression, say of one fourth or even a third of the marrow, may exist consistently with the performance of its functions. The case related at page 360 confirms this fact.

The effects of such injuries as prove fatal, are paralysis of the parts below; and consequently their extent must depend on the situation of the injury, whether it be high or low in the column. If it be high in the neck, as is usually the case in executions, death ensues instantly; if low in the neck, respiration is not immediately prevented,—in one case which I have seen, the patient sank gradually in a few hours; in the dorsal vertebræ, the patient may live two or three days. In two cases that have come under my care, one lived three or four days, and the other a week: the first of these plunged into water from a height, and struck his head on a hard sand bottom, the water being shallower than he was aware of, and fractured his spine; the other fell from the top of a house-frame, with his back across a piece of timber, and displaced two vertebræ with fracture of the oblique processes. In such cases the paralysis affects the contractile power of the hollow muscles below, as of the rectum and bladder, causing retention of their contents; but after a time, the bladder by becoming distended overcomes the resistance at the neck, and pours out its contents in a constant dribbling.

It has been attempted by Mr. Clyne and Mr. Tyrrell to remove a portion of the depressed bone; but the cases proved fatal, and most

authors advise to abstain from such experiments. Extension, which is proposed by some, I know from observation to be the extreme of torture, and not likely to prove beneficial.

The treatment in such cases should be entire rest, local bleeding with leeches, evaporating lotions, cleansing the bowels with enemata, drawing off the urine, and anodynes.

INFLAMMATION OF THE CANCELLED STRUCTURE OF THE VERTEBRÆ,
AND OF THE INTERVERTEBRAL SUBSTANCE AND SURROUNDING
MEMBRANE.

We have already dwelt on the occasional effects of these inflammations now under consideration, in the form of posterior and angular distortion, and psoas abscess; but they often exist without any such consequences, and hence they seem entitled to a separate chapter. The textures here involved are subject to inflammation from strains, over-action, external violence, and constitutional affections, and once commenced it is likely to be protracted by the constant motion of the spine, till it at length involves the spinal marrow, by causing a swelling of its investing membrane. It is apt to form an abscess in the back. A lady, after walking fast a long time, felt something give way near the upper lumbar vertebræ. In about three months, she had constant pain in the part, and after a few weeks there was a small fluctuating tumor near the end of one of the transverse processes. This was punctured, and discharged about a table-spoonful of matter. Soon after, cold shiverings and rigors, followed by fever, set in, and soon extensive suppuration, which seemed to extend upward along the spine, and in a few weeks longer produced death by extreme nervous irritation.

Another case occurred of a man who sprained his back in lifting, and felt something give way. Soon after, violent inflammation set in, a tumor formed over the lumbar vertebræ, but the matter was so deep-seated that there was some doubt of its existence. Reflecting on the magnitude and density of the fascia of the sacro-lumbalis and longissimus dorsi, and the consequent difficulty of bringing the matter forward, I made a longitudinal incision through the fascia, two or three inches long, over the part, and one inch deep, and directed cataplasms to be continued. The advantage thus gained was, that the matter soon reached the incision, and bursting through, relieved the patient much sooner than without it, thus probably saving his life.

But in all such cases of severe local pain, resulting from sprain, and not threatening suppuration, leeches and cupping are to be used freely, and rest. The spinal supporter may be serviceable. It may be fixed with crutches under the arms, resting in a belt surrounding the hips.

SPINA BIFIDA, OR HYDRO-RACHITIS.

This is a malformation which occasionally presents itself to our notice, and consists of an elastic swelling, that is generally situated in the loins, but sometimes appearing on the back of the sacrum, and occasionally in the dorsal and even cervical vertebræ. It proceeds from imperfect development of the arch of one of the vertebræ, and absence of the spinous process. The spinal membranes, deprived of their ordinary support, yield to the pressure of the fluid which they contain—which also is secreted in unusual quantity—and bulge out, forming a fluctuating tumor in the middle of the back. Sometimes the tumor becomes pendulous. The legs are often palsied. Pressure on it will produce convulsions and coma. It is supposed that the fluid communicates with the lateral sinuses through the fourth ventricle of the brain. The ordinary course of the case is, that the tumor enlarges, the skin becomes distended, inflames, and ulcerates, the fluid is discharged, the spinal membranes inflame, and the patient dies. In some rare cases, however, the skin being stronger, the patient may survive to adult age, and in one or two that I have heard of, have worn a silver cup over the tumor. Mr. Tuson says he has seen ten cases of the disease, all of which proved fatal. I have seen only three, all which, though differently treated, were fatal; one at the age of two months, one of a year, one only three weeks.

The most successful treatment I have recently heard of was that adopted by Mr. Dubourg, which I will extract from the *Gazette Medicale* of Paris, of July, 1841. After detailing his failure in one case, he gives two cases where he succeeded.

“In the spring of 1837 I was called to a female infant, eight days old, who had a congenital pediculated tumor on the lumbar region, about the size of an apple. Its color was livid from the development of a venous net-work, giving it the appearance of a vascular fungus. It was evident, on examining the vertebræ, that they were defectively formed, the edges of a bony opening being discovered. The tumor was opaque, its walls much thicker than usual, and it ap-

peared that the arrest of development was confined to the last lumbar vertebræ, the child being otherwise healthy and well-formed. Having the cautery in readiness in case of severe bleeding from the vascular coverings, and being prepared to prevent the sudden escape of the spinal fluid, an elliptical incision was made round the base of the tumor, when a quantity of reddish serum escaped, and the excision of the sac was readily effected. The finger passed readily into the spinal canal. The edges of the wound were brought together, and four needles being passed, the twisted suture was applied, as in the case of hare-lip. The threads were twisted so as to exert as much traction as possible on the contiguous parts, and small compresses were placed at the extremities of the needles to protect the skin. The child cried sharply at the commencement of the operation, but as soon as the fluid escaped from the spinal canal, it fell, for a few minutes, into a state of stupor. It cried again as the needles were applied, and by the time the dressing was finished, it took the breast as if nothing had occurred. The needles and sutures were removed on the fourth day, when the edges of the wound were found to be united. Adhesive plaster was applied, and in fifteen days a strong cicatrix, forming a sort of solid button, filling up the opening in the vertebræ, was all that remained of this reputed incurable disease. The examination of the removed tumor demonstrated that it was a cyst, distended by fluid, communicating with the spinal marrow, bounded behind by the common integument, and an expansion of the arachnoid and dura mater. The cavity was not in proportion to the volume of the tumor, for there were several layers of cellular and adipose tissue between its external and internal surfaces."

EXOSTOSIS.

This disease sometimes attacks the cervical vertebræ, presenting the appearance of a large bony tumor, covering two or three vertebræ, and extending laterally to nearly equal width. The two cases I have seen, one of which was two years under my care, occupied the two lower cervical vertebræ. They both proved fatal by paralyzing the arms and legs, and finally the trunk. Mr. Abernethy describes cases of exostosis of the ligamentum nuchæ. Mr. Cooper had one case which pressed against the arteria innominata, and stopped the pulse. I know of no certain remedy. Mr. Abernethy advised the free use of mineral acids, but, as he confesses, to no purpose.

DISEASES OF THE SPINAL CORD.

The anatomy of the spinal cord was purposely omitted at the commencement of this essay, in order that it might be given in connection with its diseases.

The spinal *column* contains the spinal *cord*, with the roots of the spinal nerves ; and the membranes of the cord, viz., the *dura mater*, *arachnoid*, *pia mater*, and *membrana dentata*.

The *dura mater*, sometimes called *theca vertebralis*, is continuous with the dura mater of the skull. It is connected to the vertebræ by loose cellular tissue, containing an oily fluid. On either side it forms a sheath for each of the spinal nerves, and adheres to them firmly. Its inner surface is smooth, being lined by the arachnoid ; and on either side may be seen the double opening for the two roots of the spinal nerve.

The *arachnoid* is also continued from the brain, and encloses the cord very loosely, accompanies the spinal nerves to their exit, and is then reflected over the inner surface of the dura mater, forming its serous surface. It is slightly connected to the cord and to the dura mater by filaments. The arachnoid incloses a serous fluid, sufficient in quantity to fill the intervening space between the dura mater and the cord, and to exert a gentle pressure on both. When, however, the dura mater is deprived of a bony structure to support it, it suffers dilatation, and the fluid accumulates in the part, constituting *spina bifida*.

The *pia mater* is the immediate investment of the cord, descending likewise from the brain, but, compared with the cerebral covering, is less vascular and more dense. It invests the cord closely, forms a delicate sheath for each filament of nerve, and sends a duplication into the anterior and posterior medial sulci or fissures of the column. It also sends off a membrane from each side of the cord throughout its length, called the *dentata*, which separates the anterior from the posterior roots of the spinal nerves. These duplicatures of the membrane posteriorly and anteriorly and on each side, hold the cord suspended, as it were, in its surrounding serous fluid, and divide it superficially into four quite distinct columns, two on each side, and each of the lateral columns is divided into two others, faintly marked, however, and all of them observed only near the top of the cord.

By this subdivision we have four divisions to each side of the column, viz., anterior, lateral, posterior, and median posterior, which are very small.

The two *anterior* are the motor columns, and give origin to the motor roots of the spinal nerves; near the brain they are called *corpora pyramidalia*.

The *lateral* columns are divided in their functions between motion and sensation, and contain what Sir Charles Bell calls the respiratory tract.

The *posterior* columns give rise to the spinal nerves of sensation, and near the brain terminate in the *corpora olivaria*, or *restiformia*.

The *median posterior* columns, consisting of a slight line merely, one on each side of the posterior median line, have no function at present assigned to them.

Such are the structure and functions of the spinal cord, as understood and believed by leading physiologists of the present day. But another class of nervous powers, connected with the spinal marrow, is superadded to the above, which appears to be well established by experiment, and is consequently admitted by most physiologists to exist, I mean the excito-motory power of Marshall Hall. A leading feature of this doctrine is, that the spinal marrow, or some part of it, is acted on by sensitive nerves, and reflects the excitement thus produced in it upon certain muscles through motory nerves extended to them, and that all this takes place independently of the brain.

Legallois, as long ago as 1812, made an important step in the investigation, by showing experimentally the connection of the sympathetic and excited actions with the spinal cord alone, and that any single division of the spinal cord would act as the centre to the portions of the body connected with it by nervous trunks—not however like the brain, with the property of consciousness either in its reception or transmission of impressions, but by a sort of automatic impulse. The automatic animal motions resulting from this property, Dr. M. Hall has grouped together, and traced out their morbid phenomena. He divides the class of nervous diseases of his excito-motory system into three subdivisions, according as they affect the incident nerves, or those on which the morbid cause acts, leading to the spinal cord, the spinal marrow itself, or the reflex or motor nerves. To follow more exactly his classification of diseases of the spinal marrow and nerves, they are,

I. Centric diseases, or diseases of the true spinal marrow itself.

II. Eccentric diseases, or diseases attacking the incident or excitor nerves.

III. The diseases of the reflex, or motor nerves.

I. Inflammation within the spine.

1. Inflammation of the membranes, or spinal meningitis.
2. Inflammation of the substance, or spinal myelitis.

Of the cerebral, sentient, or motor tracts.

Of the true medulla.

Of its principal divisions.

Congestions, Hæmorrhagia.

Centric Convulsions, or Epilepsy.

Paralysis Agitans, General,
or Hemiplegic.

Tremor Mercurialis.

II. Eccentric Diseases.

Eccentric Epilepsy.

Puerperal Convulsion.

Tetanus.

Hydrophobia.

Hysteria ; Chorea ; Stammering.

Spasmodic Asthma.

Vomiting.

Tenesmus ; Strangury.

Abortion.

III. Diseases of the Spinal Motor Nerves.

Spasmodic Strabismus.

Spasmodic Tic.

Spasmodic Torticollis.

Spasms of the Respiratory Nerves.

The foregoing diseases of the nervous system are more or less connected with a disordered state of the functions of the spinal cord or its investments, and are here introduced merely to show their nature and variety. A full account of each would far exceed the limits of a single treatise like the present. Very few if any of them exhibit any lesion appreciable on dissection, if we except inflammation of the spinal marrow and its membranes, which will now be briefly considered.

It may be divided into inflammation of the membranes, or spinal meningitis ; and inflammation of the substance, or spinal myelitis.

Sir Charles Bell thinks the membranes of the spinal marrow are the most susceptible of inflammation and suppuration of any in the body. Rheumatism, and exposure to cold, and blows or falls, and caries of the vertebræ, are reckoned among its causes. (*Louis.*)

One of these inflammations, whether meningitis or myelitis, seldom exists to any considerable degree without inducing the other; and consequently they are not easily distinguished. The location of the inflammation, whether it affects the medulla oblongata, the cervical, the dorsal, the lumbar or sacral portion of the spinal marrow, is, however, interesting, as a guide in the diagnosis and local treatment.

As a general remark, it may be said, that “the symptoms of meningitis are more those of irritation of the spinal marrow, or spasm; those of myelitis, more of destruction of the organ, or paralysis.” Both kinds, however, may exist together, or in alternation, and it is fortunate that the treatment, both general and local, is nearly the same in both.

In meningitis the prominent symptoms are pain in the part affected, augmented by movement, tenderness and pain in the side and along the limbs, spasm in the form of various kinds of muscular contraction in the trunk and limbs, constant or recurrent, aggravated by motion, sometimes convulsions. There is sometimes difficult respiration, retention of urine, and constipation.

In myelitis, there is paralysis of voluntary motion and sensation, impaired sensibility and numbness, and impaired muscular power. These are first observed combined, or singly, in one or both of the lower or upper extremities. In some cases, complicated with meningitis, there may be increased sensibility; and in others there are spasmodic affections or convulsions. (*Hall.*) Commonly the paralysis increases and extends upward. Occasionally we find paralysis of motion alone. But the symptoms vary as to the parts of the system paralyzed or embarrassed, according to the location and extent of the disease, and consequently affect the functions of the bladder and bowels at one time, and at others the respiration.

The post-mortem appearances are, in meningitis, injection, effusion of serum, or of lymph, or of pus, and ulceration; in myelitis, injection, tumefaction, softening, purulent infiltration, abscess, induration; the last is frequent in chronic myelitis. Softening is the most common morbid change of structure.

The following list of cases is the largest I have seen, and exhibits an outline of the symptoms. It was made out by M. Prus, physician to the Sal-petrière.

“Case I. Contraction of the extensors and flexors of both inferior extremities; preservation, but alteration of the sensibility of

these parts. Progressive paralysis of the sphincters of the bladder and rectum. Death. Gelatiniform softening of the two inferior thirds of the spinal marrow.

Case II. Sudden loss of speech ; deviation of the mouth to the right ; progressive diminution in the voluntary power of the left arm ; incomplete paralysis of motion in the left side of the face, without any alteration of sensibility ; involuntary discharge of saliva ; dyspnoea carried to commencing asphyxia ; death ; superficial softening of the whole circumference of the medulla oblongata.

Case III. Pricking and loss of sensibility of all the limbs, especially of the inferior ; incontinence of urine ; sloughs on the sacrum ; death ; slight softening of the posterior columns of the spinal marrow, in the portion constituting the lumbar swelling.

Case IV. Loss of motion in the inferior extremities ; sensation preserved ; acute pains continuing during many years in the lateral parts of the chest ; purulent expectoration ; hectic fever ; softening of one portion of the spinal marrow ; spinal meningitis ; caries of the seventh, eighth, and ninth dorsal vertebræ ; abscess communicating with the bronchiæ by means of numerous fistulæ ; compression of the spinal nerves in their passage through the foramina of the carious vertebræ.

Case V. Progressive paralysis of motion only, in all the limbs ; paralysis of the sphincters of the rectum and bladder ; spasmodic respiration ; sudden death in going to stool ; double softening of the spinal marrow, that is, in the cervical and lumbar portions ; the gray matter of the cord invisible in the diseased parts ; nearly so in others.

Case VI. Paralysis of motion only in the four limbs, which are slightly contracted ; progressive paralysis of the sphincters of the rectum and bladder ; reddish softening in the middle lobe of right hemisphere of cerebrum, and in anterior lobe of left hemisphere ; spinal marrow perfectly healthy.

Case VII. Paraplegia during three years ; exostosis of left clavicle ; treatment by mercury and sodorifics ; successive disappearance of exostosis and of paraplegia."

The treatment, as before observed, is nearly the same in meningitis and myelitis, and consists chiefly in local bleeding by cupping and leeching, particularly the former, in acute cases, and in issues and setons in chronic ; in the use of mercury, rest in a recumbent posture, gentle laxatives, and abstemious living.

SPINAL IRRITATION.

The medical reader must ere this time know what is understood by the term "spinal irritation," or, as some call it, "functional disease of the spinal marrow." Although he searches in vain for it in systems of nosology, every periodical presents reports of cases agreeing so nearly in the range of symptoms, and in the mode of treatment found most successful, as to establish the identity of their nature, and, however obscure may be their pathology under the dissecting-knife, to render it at least convenient to give them a local habitation and a name, by which they may be readily recognized and properly treated.

The first writer, so far as I know, who called the attention of the profession to the connection between certain neuralgic symptoms in different parts of the body and spinal tenderness, was Dr. Player, who in 1821 published a short essay describing this connection as often exhibited in his practice, and also the success attending the application of local remedies to the spine in curing affections, however distant their manifestation, to which the nerves arising from the diseased part are distributed.

It is worthy of remark that the simple facts, though known and acknowledged by most of the profession, and republished with innumerable cases in illustration of them, received very little accessions calculated to make these diseases dependent on the spine any better understood. Post-mortem examinations are rare, and have shed scarce a ray of light on their nature or pathology; and the only additional information on the subject consists in enlarging the range of morbid manifestations in remote organs. It must however be admitted that the doctrine of an excito-motory system, of Marshall Hall, affords the best clue towards unravelling the intricacies of the subject. By this we learn that irritations of the spinal marrow may be idiopathic, or may arise from "some previous derangement in the functions of some organ or organs," transmitted through the incident, or excitor nerves, as from the teeth, the stomach, and bowels, or the uterus, to the spinal marrow, and after a time be transmitted thence by the reflex nerves to other organs and tissues, inducing various neuralgic and spasmodic complaints, so often referred to spinal irritation. It may be said that this idea was admitted before Hall's theory was published. And so it was; but the reason why teething in children, gastric irritations, and other impressions acting on the spinal cord and through it, are reflected on the muscular and nerv-

ous system in the form of spasms and convulsions, without affecting in any way the cerebral centre with a sense of pain, is puzzling on any other system than that of Marshall Hall, which teaches that the excito-motory system is independent of the brain.

It would require more space than this essay can afford, to give a detailed account of the symptoms that proceed from spinal irritation. I must therefore present a tabular view of the largest number of cases that to my knowledge have come under the observation of any one individual, and which my own observation of cases teaches me exhibits a correct analysis. I have added a few symptoms, which have occasionally occurred in cases under my own care, which are italicised. The original table is by William Griffin, M.D., of Limerick, Eng.

A. Twenty-eight cases of *cervical* tenderness ; 8 men, 8 married women, 12 unmarried. Prominent symptoms : headache, nausea or vomiting, face-ache, fits of insensibility, cough, dyspnœa, affections of the upper extremities. In 2 cases only, pain of stomach. In 5, nausea or vomiting—*asthma, pain under clavicle and under scapula.*

B. Forty-six cases of *cervical and dorsal* tenderness ; 7 men, 15 married, 24 unmarried women.

Prominent symptoms. In addition to the foregoing, pain of stomach and sides, pyrosis, palpitation. In 34 cases, pain of stomach ; in 10, nausea or vomiting. *Hæmoptysis, 3 cases.*

C. Twenty-three cases of *dorsal* tenderness ; 4 men, 6 married women, 13 unmarried. Pain in stomach or side, particularly at the ensiform cartilage, cough, oppression, fits of syncope, hiccup, eructations. In one case only, nausea or vomiting ; in almost all, pain of stomach.

D. Fifteen cases of *dorsal and lumbar* ; 1 man, 11 married women, 3 unmarried. Pains in abdomen, hips, loins, lower extremities, dysury, ischury, and the symptoms of dorsal tenderness. In one case only, nausea.

E. Thirteen cases of *lumbar*. Pains in lower part of abdomen, dysury, ischury, pains in testes or lower extremities, or disposition to paralysis. In one case, spasms of stomach and retching. *Tenesmus 2 cases, and acute pain in the labia pudendi in 2 cases.*

F. Twenty-three cases, all spine tender ; 4 men ; 4 married women, 15 unmarried. All the above symptoms combined, excepting those I have added.

G. Five cases, no spinal tenderness; symptoms like the foregoing.

In all local pains about the trunk and limbs that wear the aspect of neuralgia or convulsions, for which no adequate cause is assigned, I am in the habit of trying the tenderness of the spine, and in a large majority of cases find it distinctly marked. In respect to those where this symptom is wanting, but which in every respect resemble the others, are we to consider the spine as implicated, and treat it accordingly? This question most therapeutists would answer in the affirmative. The centric irritation, as Mr. Hall would call it, may be in the roots of the nerve within the spinal canal, where being enclosed in a bony covering, the usual tenderness might not extend to the integument's, so as to feel the painful pressure of the fingers, and may yet have the same character, and be as susceptible of relief from local depletion and revulsion, as if the irritation existed in the nerves after their exit from the osseous canal. Marshall Hall states that even inflammation of the cord and its membranes may exist unaccompanied by tenderness of the spine on pressure.

Among the most remarkable neuralgic diseases connected with spinal irritations, I have found to be those which result from repelled irritations on the surface; and as these have in a great degree escaped the notice of the authors I have read, I will subjoin a few cases.

Miss H. had long had a pimpled face—acne—to remove which she used a cosmetic containing a preparation of the oxyde of lead. Soon after its disappearance she complained of a numbness of one hand, followed by clonic spasms or twitchings, which soon increased and involved all the limbs. These increased in violence, and gradually involved the whole system in general convulsions, and caused her death. Early in the disease there was tenderness on pressure of the nape of the neck. Counter-irritants were applied over the part, and produced temporary abatement of the spasms, but they soon returned and proved fatal.

A case of itch was suddenly cured, and was followed by chorea. In this case there was tenderness of the spine. The symptoms yielded to counter-irritation and mineral tonics. Cases exactly similar have been cured by restoring the itch. These occurred before attention was directed to the spine, but from the correspondence of symptoms and course of the muscular contractions, there is no doubt spinal irritation existed. From these cases it would seem that the

sudden suspension of an accustomed stimulus in the skin, has equal effect in disturbing the action of the spinal nerves, as the positive irritation of teething, or of the gastric organs.

Many times I have known tenderness of the spine and various neuralgic affections to alternate with cutaneous diseases; probably by metastasis, as the nervous affections yielded to permanent irritations on the skin. The sudden drying up of humid tetter on the skin in young children, I have known to produce spasmodic twitching of the arm. So intimate indeed is the sympathy between the skin and the spinal marrow, that Guérin, in his *Etiology of Lateral Curvature*, refers to it as a proof that disorder at the root of the spinal nerves, caused by repelled cutaneous disease, influences the spinal muscles of one side more than those of the other, either in the form of tonic spasm or palsy, so as to produce lateral curvature. I may further add, that in conversation with Dr. Abbie, of the orthopedic institution, he spoke of transferred irritations from the surface as among the most frequent causes of spinal irritation.

The tabular view I have given places thoracic diseases among the most prominent. I have had two cases of consumption in one family, besides others elsewhere, that are worthy of particular notice. In the first case, the complaint of ill health began in an excited state of the voluntary muscles, extreme uneasiness, changing posture in the chair, jerking of the arms, some wandering pains in the trunk and limbs that were hardly definable. To these succeeded involuntary twitchings of the arms, resembling chorea, rendering the patient unable to write, and even to feed himself. Suspecting spinal irritation, I found on examination the lower cervical and first dorsal vertebræ extremely tender. I now applied cups daily over the part, took him with me on a journey to the Springs and to the sea-shore, and his symptoms all subsided, and emaciation was succeeded by full health. It lasted, however, but a few months, when pain commenced in the side, cough, loss of strength and flesh. He took a journey south in March, where exposure to bad weather aggravated his symptoms, and he died the following summer of tuberculous consumption. The evidence furnished by this case goes to show that tubercles may exist, and become a source of nervous irritation, by creating tenderness of the spine, from which the same irritation may be extensively radiated throughout the system, without any decided local manifestation of disease in the part primarily affected. The lungs transferred their irritation to the spinal marrow and made it the focus of disease,

and from this it was radiated throughout the muscular system by the reflex motory nerves described by Marshall Hall. Here then we have a case illustrating his views of the location of disease in the incident, the centre, and the reflex order of nerves; but finally proving fatal in the organ primarily affected.

The sister of this patient was attacked, while in the enjoyment of perfect health, with hæmoptysis, which recurred frequently, and was succeeded by slight cough and some wandering pains about the chest. There was also a general irritability and restlessness, with some tenderness of the spine. Travelling in the south, and passing a winter in a warm climate, with exercise and extreme care, kept the progress of the phthisis in check for more than a year, and was tried a second winter, but the disease of the lungs is actively progressing, and from present appearances she will not reach a third winter. From this case I infer that the hæmoptysis lessened the amount of irritation in the excitator nerves, and consequently in the spinal centre, and hence the reflex morbid affections were far less than in her brother, yet the lung affection progressing steadily will prove fatal at last.

The cases are interesting, as showing the importance, in chronic visceral disease, of having an eye to the spine. We may not be able to do much towards curing the primary disease, if it be tubercular phthisis, but the morbid influences which it sends to the spine may there be so far mitigated as to remove all reflex disease flowing from it.

I need not advert to the morbid influences shed over the system by hypochondriasis and hysteritis, originating in the liver and uterus, and propagated to the spine. Dr. Tate, of London, after extensive experience, added to profound attainments, "has not hesitated to publish the opinion that the appalling and anomalous symptoms presented in the hysterical female are all capable of being referred to an irritation existing in some portion of the spinal marrow, originally induced by a disordered state of the uterine function. He was led to this conclusion by observing that tenderness on pressure over the spinal column was a uniform attendant and characteristic of these complaints, connected almost uniformly with pain under the left breast, and palpitation of the heart. These four symptoms, viz., disordered menstruation; spinal tenderness, most generally evident over the upper dorsal vertebræ; pain under the left mamma, and sometimes under the right; and palpitation of the heart, may be dis-

tinguished among a multitude of frightful appearances, in almost all cases of chronic nervous disorder in young females, and when they are conspicuous Dr. Tate considers them as constituting a peculiar and distinct disease, which, to avoid confusion, he proceeds to call hysteria.

Treatment.—In examining any case that presents itself, which exhibits the symptoms detailed in the tabular view, if we can detect any tenderness of the spinal column with general nervousness, we are to direct our attention first to the removal of the spinal tenderness, and secondly to the organ primarily affected, whether the skin, the thoracic, the abdominal, or pelvic viscera.

Of all the remedies I have tried under the first indication, cupping has been most beneficial. Leeches are nearly as valuable, but, besides the trouble of making them draw, which to a nervous patient is very annoying, they act only by depletion, while cups draw the blood from the deep-seated parts toward the surface, and may be used for this purpose alone, as well as for the extraction of blood. Nearly all writers recommend local depletion, except Dr. Tate, who prefers strong counter-irritation. The cupping should be practised daily at first, with the scarificator chiefly, but as the disease begins to yield, dry cupping should be gradually substituted. I usually begin with applying three or four cups with the scarificator, on both sides of the spine, and as many dry cups. I have sometimes found two portions of the spine affected with tenderness, and in such cases have noticed a corresponding range of the reflex disorders in different parts of the trunk. In these the remedy was applied to both portions of the spine with corresponding relief.

The next remedy is counter-irritation, which should be proportioned in its strength and permanence to the duration of the disease. In moderate cases, camphorated volatile liniment, with or without the addition of spirits of turpentine, may be applied immediately after the cupping, or in slight cases of tenderness this liniment without cupping may answer, but in all severe cases of tenderness, and consequent diseases elsewhere, local bleeding should precede the stimulating applications. I have known all the symptoms aggravated by a blister or other irritant over the tender portion of the spine, where bleeding has not preceded.

The next most important remedy is travelling and change of residence. Mr. Rogers speaks of it in such strong terms of approbation, that the reviewer of his book regards its efficacy as proof that

no disease of the spine exists. (British and Foreign Med. Review, 1836.) I have always noticed marked good effect from it.

Carbonate of iron, given as freely as the patient can bear, I have always found serviceable, after cupping or leeching. The acetate of iron, Griffith's myrrh mixture, and various other forms of chalybeates, are worthy of trial. The vegetable tonics have not in my practice proved beneficial.

Reviews.

I.—*Traité Pratique de la Pneumonie aux differens ages et dans ses rapports avec les autres Maladies Aigues et Chroniques.* Par A. GRISOLLE, D.M.P. Medecin du Bureau Central des Hopitaux et Hospices Civils de Paris ; Membre Titulaire de la Société Médicale d'Observation, etc. etc. Paris : 1841. Octavo. Pp. 747.

Practical Treatise on Pneumonia as occurring at different ages, and in its relations to other Acute and Chronic Diseases. By A. GRISOLLE, D.M.P., &c. &c.

OF all the diseases to which the human frame is subject, there is perhaps no one which is observed by the physician with more interest, or in the treatment of which he has more satisfaction, than pneumonia. Since the discovery of auscultation and percussion, inflammation of the lungs is, to a certain degree, as well the subject of recognition by our senses, as inflammation of the skin. We can limit the disease and trace it in its stages, we can ascertain the time when resolution commences, we can follow this process as it extends successively through the different diseased portions of the lungs. In this way we can watch the effect of therapeutical agents, and as precision and exactness in our knowledge are the results of this facility, we apply remedies with great confidence.

That pneumonia, then, should have been a favorite subject with writers, is easily understood. From the severity and frequency of the disease, it was so even before the discovery of Laennec. Since then, the number of treatises and memoirs of which this disease has been the subject, is very great, and many points in its history have been fully discussed. Still, however, a proper monograph was wanting. This want is supplied in the volume before us. M. Grisolle is of the school of observation. Fully aware of the difficulty and importance of careful observation, and of full and accurate records of its results, he studied the disease in an especial manner for six years, and in that time collected 373 cases, all observed and recorded by himself. A careful and exact analysis of the cases constitutes the original part of

his work. At the same time he has sought for all that is important and valuable in the labors of those who have preceded him. He has not observed extensively the disease in the very young, nor in the very old. But Valleix, Rilliet and Barthez, Ruz and Gerhard, have communicated the results of an extensive observation of the pneumonia of children. A memoir on the pneumonia of the aged was published in the "*Archives Générales de Médecine*," by Hourmann and Dechambre. Louis, Andral, Chomel and Bouillaud have made public the results of their observation of the disease in adults. M. Grisolle has appropriated much from all these sources. He has studied the work of Dr. Stokes, he has sought for information from the statistical reports of the diseases of the British army. He has gone back to earlier writers, and by the aid of careful examination and sound criticism, he has thus endeavored to collect in one volume all that is known of pneumonia.

As the perusal of mere numbers is tedious, our author has endeavored as much as possible to conceal them, and to communicate his results in as interesting a form as possible. He certainly has succeeded in this attempt. We regret, however, that he did not subjoin in an appendix the numerical tables from which his book was prepared. They would have been useful to the writer desirous of publishing his own results, and comparing them with those of his predecessors, and to the mere student who often wishes facts presented in the most convenient form for reference.

Of course we cannot pretend to give a thorough analysis of a book prepared in this way, nor to discuss all the important points as presented by the author. Seven hundred and forty closely printed pages are not thus to be condensed. The book is the standard work on the disease, the history of which it professes to give. It should be in the library of every scientific physician. We hope, for the benefit of medical science in our country, that it may be translated and published here.

At this time we can only profess to put before our readers so much as shall enable them to judge whether our commendation has been properly bestowed.

M. Grisolle's first chapter is devoted to the anatomy of the disease. He admits the three stages as commonly described. He has never observed the appearances which have been given by Dr. Stokes, as an earlier stage than congestion. Nor has he found in any case where the disease was not consecutive, congestion without hepatic

zation. He gives the following table to show how far the different stages have been found by him to be united in the same case.

1st and 2d degrees in	4
1st and 3d degrees in	3
2d and 3d degrees in	16
The three degrees in	2
The 2d degree in	1
The 3d degree in	3

In four cases he has seen an entire lung invaded by the disease. He has also noticed an ordematous condition around the diseased parts. Lobular pneumonia, so frequent in children, is occasionally found in the adult, and sometimes even in the aged. Our author has never seen the disease described by Andral as vesicular pneumonia, and by Rilliet and Barthez as vesicular bronchitis. That the right lung is more frequently the seat of the disease than the left, is an established fact. In the cases observed by M. Grisolle, the proportion in which the right and the left lungs were affected, was as 11 to 6. Adding to his own cases those observed by Chomel, Andral, Bouillaud, Barth, Forbes, Lombard, &c., he has 1430 cases, amongst which the right lung was diseased 742 times, the left 426, and in 262 patients the pneumonia was double. In 128 autopsies of new born children, made by Valleix and Vernois, hepatization of the right lung was found in every case, whilst in 17 cases the left lung was free from disease. Hourmann and Dechambre found 84 right pneumonias to 27 left in the very aged. M. Grisolle's results as to the infrequency of double pneumonia, it having occurred only once in 16 cases of the disease, do not correspond with those of other writers. Barth, however, relates, that of 125 cases observed by him, in the wards of Chomel, the disease existed in both lungs in 8 only, and Louis has also recorded his experience to the same effect. There has been also some discrepancy in the results of those who have compared the frequency of the disease in the upper and lower lobes, agreeing for the most part that the disease more generally attacks the lower lobe. Andral gives the relative frequency as 3 to 2; Briquet as 2 to 1, and Bouillaud as 1½ to 1. From an examination of 264 cases, M. Grisolle finds that 4 to 3 are the proportions, but these vary in different years. Dr. Stokes has remarked the same variation. As to the question which part of the lung is principally affected in pneumonia, whether it be the vesicular or the intervesicular structure, M. Grisolle does not find sufficient data to enable him to de-

cide. From the existence of the crepitant rale, he infers that the vesicles must be diseased, and the granulated appearance he would attribute to the same cause. Abscesses of the lungs, as a sequel of pneumonia, are regarded by French pathologists as very infrequent. Laennec had only seen 5 or 6, Chomel only 2, Andral and Louis each 1, and M. Grisolle also has seen only 1. He has, however, collected 22 cases from different authors. Six of these patients were more than 70 years of age—1 only was a child of 4 years. The abscesses were found as often in the left as in the right lung, 9 times in the upper and 5 times in the lower lobe. Our author considers consecutive and metastatic abscesses in different sections. He has never found gangrene in the lungs of those whose disease has been a primitive pneumonia. In an individual who died the tenth day, he found the greater part of the lung in a state of red and grey hepatization; but in the centre of the lower lobe was a spot which by its mahogany blackish color, contrasted strongly with the greyish tints of the surrounding parts. The lung in this point was converted into an inorganic pulp, from which, however, there was not any remarkable odor. This lesion is regarded by M. G. as a species of mortification of the pulmonary tissue, which he compares to softening of the central nervous organs. In 18 cases M. Grisolle examined carefully the condition of the bronchi, without finding dilatation in any, although this state was so frequently found by Rilliet and Barthez in their autopsies of children. The mucous membrane of the bronchi was of a dark-red color in 12 instances, but was not swollen nor thickened in any case. M. G. has not seen himself false membranes in the bronchi, but he alludes to 10 cases observed by Nonat in the epidemic of 1837, in all of which these membranes are found in the bronchi of the hepatized portions. In 7 of 9 cases the bronchial glands were swollen and softened, and in one case pus was found in one of them. Clots were found in the heart and large vessels in 24 of 25 cases, and in this respect pneumonia is remarkable as compared with other acute diseases. In a fifth of the cases, the clots were colorless, thick, elastic, adherent to the walls and wound around the columnæ carinæ. As Postu had declared that all fibrinous concretions of the blood could be formed artificially after death, M. Grisolle repeated six times his experiment. He sought the blood from the veins of rheumatic or pneumonic patients in human hearts which had been emptied and washed, and then protected them from the air and kept them without motion for 24 hours. On examining them, he found

soft black clots, but never any of the tough yellow concretions. M. Grisolle has found these only in patients who have died of an inflammatory disease. In 24 patients in whom the condition of the gastric mucous membrane was ascertained with care, it was found to be softened in a greater or less extent, six times. All these patients had taken tartar emetic. M. G. is not, however, disposed to consider the lesion as an effect of the medicine. In 8 of 24 patients, the same softening was found by Chomel and Genest, and only three of these had taken this drug. Of 16 of the subjects in whom the mucous membrane appeared to be healthy, 8 had taken the medicine in the same doses. The subject of chronic pneumonia, about which so much has been said by different authors, receives a large share of attention from M. G. The lung in this state is hard, and of a grey, red or black color. It has been seen by him only three times. M. Chomel, in 16 years, has met with it only twice. 'Tuberculous chronic pneumonia, however, or an induration of the lungs, round tubercles or cavities, are a frequent affection. Of 75 subjects who were attacked by pneumonia in the course of acute or chronic diseases, the pulmonary inflammation was found, after their death, to be still in their first stage in 30. In only 12 of these cases was there any purulent infiltration. Five of the 22 individuals in whose lungs abscesses were found, had been ill for some time when the pneumonia supervened. We notice at once how different are these results from those obtained by an examination of cases of primitive pneumonia. M. G. finds that an analysis of his own cases does not confirm the opinion that there is any thing peculiar in the anatomical appearances of pneumonia of typhoid fever. Splenification, carnification and lobular hepatization, are however more often met with in the disease when consecutive, than when primitive.

Etiology.—Pneumonia is a disease of all ages. It is not unfrequently the cause of the death of the fœtus and of the new-born child. Primitive pneumonia is a rare disease in children—secondary pneumonia is frequently met with in them. Thus M. Vernois found inflammation of the lungs 113 times at the autopsies of 114 new-born children, and M. Rufz says that he has seldom examined the body of a child dying at between two and five years of age, without finding pneumonia. To ascertain at what age of adult life the disease is most frequently met with, M. G. gives a tabular view of his own cases, arranged according to ages. He then adds to his own cases, those of Leroux, Chomel, Bouillaud, Briquet, and thus has 630 pa-

tients. As the results of the two tables correspond, we subjoin only the second.

From 14 to 20 years	84
“ 20 to 30 “	190
“ 30 to 40 “	117
“ 40 to 50 “	107
“ 50 to 60 “	84
“ 60 to 70 “	37
Above 70	11

But we must not draw direct conclusions from the above tabular view, as to the frequency of the disease at different ages, without making allowance for the difference of the number of persons at the different ages, who enter the Paris hospitals. When this has been done, the period between 20 and 30 years is still that in which the disease is most frequently met with. The disease is as often seen in individuals between puberty and 20 years, as in those between 40 and 50. Diminishing in frequency in the following ten years, it becomes more frequent in those over 60, and it is the most frequent as well as the most fatal acute disease of old age. That men are more subject to pneumonia than women, has been remarked since the time of Cœlius Aurelianus. Of M. G.'s patients, 236 belonged to the male, and only 68 to the female sex. This difference, however, is not to be explained by the mere difference of sex, but rather by the difference of occupation. At Buhl, a mountainous, vine-growing district, where the two sexes were employed out of doors, of 94 pneumonias, 50 were in women, and only 44 in men. In children, according to the numbers given by Valleix, Vernois, Hocke and Rilliet and Barthez, the disease occurs with the same frequency in the two sexes. M. Grisolle does not find, on examining his own cases and those of others, that the humpbacked are particularly subject to primitive pneumonia. But the disease is often developed in them when laboring under other diseases. Thus, at the autopsies of 24 of these individuals, in 16 there were traces of pneumonia. M. Grisolle has investigated, with a great deal of care, the question how far the first attack of the disease acts as a predisposing cause to produce a second. Of 175 patients, 54 had already gone through with the disease. The previous attacks varied in number from 1 to 8, and it would seem, from M. G.'s facts, that the oftener the individual had already been affected, the more liable was he to a new affection. At the same time, the lung previously diseased seemed more frequently the one to suffer at

the second attack. Of 35 patients who had had two attacks, in 25 the same lung was affected both times. Does menstruation predispose to the disease? M. Grisolle has examined carefully in 11 cases as to this point. In 6 of them the disease occurred at the menstrual period, and in 3 of them the function continued, notwithstanding the supervention of the disease. In 3 other cases the catamenia did not make their appearance. From this small number of cases, it might be inferred that a woman is more liable to contract the disease at this period, than at other times. M. Grisolle, from his own experience, would say, that those recently confined and those nursing, are not peculiarly liable to pneumonia. According to a table given by our author, in which the number of those taken sick in each month is put against the name of the month, the months of April, March, February, May, are those in which the disease is most rife; whilst in August and October it is most rarely observed. MM. Hourmann and Dechambre have found the disease most prevalent amongst the aged, in the month of March, and then in point of frequency were December, April and February. The months of April and March, again, are those in which the disease prevails chiefly amongst children. That pneumonia is not an infrequent disease in summer, has also been remarked by other observers. Of 54 cases of the disease, 29 commenced when the wind was from the north. At the same time it has been observed in Geneva, that the north wind prevailed during as many days in September as in May, the disease being most frequent in the last, and least so in the first month. It is known that M. Bouillaud has expressed and defended his conviction of the correctness of the commonly received opinion, that cold is almost always the cause of the disease. In 205 patients, M. Grisolle questioned with great care and minuteness as to the exposure of the patients, and 49 of them only had been so subjected to its influence that the disease could be attributed to it. Of 79 patients interrogated by M. Chomel, 14 only had been exposed to cold, and of 125 pneumonias observed by Barth, one third of them only could be attributed to the influence of this agent. In the Foundling Hospital, where all the children are in a room kept at the same uniform temperature, we cannot assign cold as a reason why some are attacked by the disease. When cold has been the cause, its effects for the most part have been immediate. Thus, in 34 cases, where the time which elapsed between the application of the cause and the development of the disease was noted with accuracy, in 18 the premoni-

tory symptoms followed immediately the exposure; in 11, one, two or three hours elapsed, and in 4 patients from one to two days intervened between the application of the cause and the development of the disease. Still, M. Grisolle is of the opinion, that when the intervening period is more than 24 hours, and when there are no especial circumstances in the case, we should consider the exposure to cold and the development of the disease simply as coincidences. And in all the cases where we admit cold to be the exciting cause, some predisposing cause must have acted at the same time. M. G. devotes a long article to a consideration of the influences under which secondary pneumonia is developed. It may be said generally, that fever and weakness are the two principal causes of the pneumonias which supervene in the course of other diseases. Of 197 children, laboring under gangrene of the mouth, croup, hooping-cough, measles, small-pox, enteritis, in 90 pneumonia appeared to be the principal cause of death. The anatomical appearances of this disease were found in seven-eighths of those dying with croup, in one-third of those dying with measles, enteritis and hooping-cough. Those who have observed children between the ages of 2 and 15, agree that when the subjects of epidemic measles they are very frequently affected with pneumonia, which, at the same time, is generally the cause of death. The same, however, is not true of adults, except in occasional epidemics. Thus, this complication has been observed by M. Grisolle in only one-twentieth of his cases. Smallpox at all ages is less frequently complicated by pneumonia than measles; but scarlet fever is, of all eruptive diseases, that in which the lungs are most rarely the subjects of inflammation. M. Grisolle has never met with a case in which this has taken place. M.M. Rilliet and Barthez have not observed any, and of 10 cases of scarlet fever reported by M. Becquerel, one only was complicated with pneumonia. The same fact has been noticed in several epidemics of scarlet fever; but of the anasarca succeeding to scarlet fever, pneumonia is a frequent complication. Glanders and phlebitis are the two acute diseases in which pneumonia most frequently supervenes. In puerperal fevers, accompanied with uterine phlebitis, the lungs are often inflamed, whilst of 52 cases of metritis, in which an autopsy was made by M. Grisolle, the lungs were free from inflammation in every case. In capillary phlebitis of the bones, coming on after amputations in the continuity of limbs, after wounds of the skull, hepatization of the lungs is frequently met with. In one-seventh of the cases of typhoid fever observed by M. Grisolle,

and in one-fifth of those under the observation of M. Louis, pneumonia supervened in the course of the disease, and this same disease is met with in about the same proportion in patients suffering under the febrile diseases of the brain and its membrane. After phthisis, organic diseases of the heart are the chronic diseases in the course of which pneumonia is the most frequently a complication. Of 65 such patients, in 18 the lungs were inflamed, and Clendenning found pulmonary inflammation in 36 of 145 autopsies of individuals dying with chronic disease of the heart. The anatomical characters of pneumonia are found in one-sixth or one-seventh of those dying with cancer, chronic disease of the liver, albuminous nephritis. Pneumonia is also a very frequent disease in the insane. Of 168 autopsies made at Charenton, in one-ninth of them the lungs were inflamed. Of 52 patients dying at Bicetre of an incidental disease, that disease was pneumonia in 11. In some of these cases which have just been passed in review, the developments of the secondary pneumonia may be explained by the direct influence of the primitive disease. Thus croup, hooping-cough, capillary bronchitis, pulmonary apoplexy (in which, however, secondary pneumonia is rarely met with), may be supposed to act in this way. Tubercles do not appear to act by the mere mechanical pressure. Of the two causes of secondary pneumonia, fever and weakness, M. Grisolle thinks the latter to be more efficacious. In erysipelas and in articular rheumatism, pneumonia rarely supervenes, whilst it is very frequent in organic affections of the liver, in paralysis and other diseases where the prostration is great and there is but little fever. The opinion of the ancients, that the disappearance of rheumatism and gout from the limbs frequently concurred with a severe attack of pneumonia, has not been sustained by later observation. Andral, however, reports such a case; a similar one has since been observed at the hospital of La Charité in Paris, and M. Grisolle gives one of articular rheumatism with lumbago, where a pleuro-pneumonia supervened, the lumbago disappearing, and the pains in the joints being severer at the same time. According to a table given by M. Grisolle, secondary pneumonia is much more frequent in the aged than in the young. Congestion of the lung taking place in cases where the patient has been lying for a long time on the back or on the side, appears from a careful examination of facts, to be frequently a determining cause of pneumonia. This disease, too, is frequently preceded by pulmonary catarrh. According to M. Grisolle's statistics, pneumonia supervenes in one quarter of those suf-

fering from acute bronchitis. In four-fifths of these patients, there was no appreciable occasional cause. These cases should serve as a warning that an acute pulmonary catarrh is not to be neglected, as its symptoms may be precursory of so severe a disease as pneumonia.

The fourth chapter of M. Grisolle's book is occupied with a consideration of the manner in which the disease first shows itself. A chill occurred in the first 12 hours of the disease in 145 of 182 patients; and in 110 it was the very first symptom. With the exception of intermittent fever and puerperal peritonitis, there is no acute disease, the commencement of which is so frequently marked by a chill. In the greater number of cases, the first symptoms of the disease are local from the chest. But in 7 patients, during one, two, three or five days, fever, prostration, loss of appetite, were the symptoms. One patient, during the first days, complained only of a violent lumbago, 2 were troubled with obstinate vomiting, and 3 complained of a violent headache. An old man, perfectly well on going to bed, woke up in the night, feverish, restless and delirious. Thus it will be seen that the first symptoms of pneumonia are by no means always so characteristic as to render the diagnosis sure and easy. And in consecutive pneumonias, to make the diagnosis in the commencement of the disease, is often still more difficult. In the 38 cases observed by M. Grisolle, the chill took place in only 9, and the pain of the side in only 6. The dyspnœa, which would attract attention in many cases, in some cases of thoracic disease might pass as a phenomenon of the original affection. In the old and the insane, extreme prostration and dyspnœa coming on suddenly are often the first notice, to the physician, of the inflammation of the lungs.

In the fifth chapter M. Grisolle goes on with the symptomatology, considering each symptom in a separate article. Of 301 patients, pain in the side was wanting in only 29. In four-sevenths of the cases it was felt near the nipple. Is this pain merely pleuritic? An examination of M. Grisolle's own cases has produced in him the conviction, that inflammation, strictly confined to the pulmonary tissue, does give rise to a sharp lancinating pain. As a general rule, the dyspnœa and the number of inspirations are in proportion to the extent of the inflammation of the pulmonary tissue—though there are exceptions to this rule. Thus, in several patients observed by M. Grisolle, the dyspnœa was moderate, the number of respirations in a minute did not exceed thirty, and yet at the autopsy both lungs were inflamed, or the disease occupied the whole of one lung; whilst in

other cases, where the pneumonia was in a very limited extent, the dyspnœa was extreme, and there were from 50 to 60 respirations in a minute. Our author frankly avows his inability to explain this. Is the pain a cause of dyspnœa? This question is answered in the negative by a comparison of two groups of 16 patients each, which have been selected with a view to their resemblance in all points except the pain in the side; the patients of one group having been free from it, and it having been a prominent symptom in those of the other. Nor is any difference found in the dyspnœa of pneumonias of the superior and those of the lower lobes of the lungs, as ascertained by a similar appeal to facts. Of 90 patients, in whom the disease came on in the midst of perfect health, not having been preceded by bronchitis, 80 of them coughed in the first 12 hours, 6 did not cough till the end of the first day, and 4 patients were free from cough till the close of the second day. Paroxysms of coughing were neither as frequent nor as troublesome as in bronchitis. Even in severe and fatal cases, in 10 of 12 the cough was less frequent and less troublesome in the last days of life. The expectoration in pneumonia is an important and a characteristic symptom. At the same time there is a great variety in the appearance of the sputa, and the characteristic rusty sputa in some cases are wanting. Of 131 patients these sputa were observed on the first day in 45, in 31 on the second day, in 14 on the third day, in 14 on the fourth day, in 2 on the eleventh, and in 1 on the twelfth. Of 60 patients, the expectoration was at first rusty in 35, in 25 it was of the color of barley candy, and in 6 it was bloody. In all the patients who recovered, without one exception, the sputa which had been rusty or bloody became mucous or sero-mucous towards the close of the disease. Of 22 patients who died, the expectoration ceased in 9, in the last 24 or 48 hours of life. In 20 cases expectoration was white and opaque during the whole course of the disease. M. G. has remarked that certain epidemics are characterized by the absence of the characteristic sputa. In 14 patients, 5 of whom died, there was no expectoration at any period of the disease. In old people the characteristic sputa are frequently wanting, and so in children. MM. Valleix, Vernois and Kiwisch have found before the mouths and nostrils of new-born children suffering from pneumonia, a whitish or reddish foam.

In the article on inspection of the chest, M. Grisolle relates two cases which show that a partial or general dilatation of one side of the chest may be caused by a simple pneumonia, independent of any pleurisy

symptoms from auscultation. From a few cases in which M. Grisolle had an opportunity to examine the chest of patients in whom the disease had commenced within a few hours, he is inclined to the opinion that a feeble respiratory murmur may be the earliest stethoscopic symptom. It does not last long, however, for it was found by him, at the commencement of the second day, in only one-sixteenth of his cases. In 3 cases it was the only sign from auscultation in the first 7 days. The puerile respiration which has been given by Dr. Stokes as an early stethoscopic sign of the disease, is not considered to be so by M. Grisolle, as he has never observed it. In the great majority of cases, the crepitous rale is the first symptom that is detected on putting the ear to the chest. In only 4 cases was M. Grisolle sure of the absence of rale through the whole course of the disease. Still, in 34 patients this rale is what was commonly designated as sub-crepitous. In the aged this last rale is oftener found than the crepitous, and in an epidemic of 1837, M. G. observed 18 patients in whom he could never detect the characteristic crepitous ronchus.

The passage from the first to the second stage is sudden in a majority of the cases. In some, however, M. G. has heard, during inspiration only, a sound which he compares to the tearing of new silk, in other cases to the rustling of it. This is sometimes heard only on coughing, and at the same time with the crepitous rale. In one case, where an opportunity to examine the lung was offered, viz. soon after having heard this sound, an induration limited to the surface of the lung was found to explain it. In 10 patients, this sound having been heard during two or three days, was replaced by bronchial respiration. The remark made first by the late Dr. James Jackson, Jr. of this city, that the expiration becomes bronchial at an earlier period than the inspiration, is confirmed by the observation of M. Grisolle. Since in 3 cases, where the whole lung was hepatized, bronchial respiration was heard up to the very last moment of life, our author cannot agree to the opinion of Dr. Stokes, that bronchial respiration requires for its production not merely the solidity of the lung, but a certain expansion of the side during respiration. In the neighborhood of congested and hepatized parts of the lung, our author has found a feebleness of the respiratory murmur to be the most usual physical sign, with a certain degree of dulness, and a want of elasticity on percussion. In 35 patients the condition of the healthy lung was carefully watched and noted through the disease, and in only 3 of these was there any puerile respiration. Bronchial respi-

ration is as important a symptom in the child as in the adult, and it does not present any remarkable differences as found in the aged. In 4 patients, observed both by MM. Chomel and Grisolle, there were no auscultatory signs at any period of the disease.

In the second article of the chapter we are now analyzing, our author considers the general and sympathetic symptoms, devoting to each a separate section. In the first of these he treats of the symptoms from the organs of circulation. In more than one-fourth of his patients, the pulsations of the artery were 100 in a minute; in more than half of them they were from 100 to 116; and in less than one-sixth, from 116 to 140. With some few exceptions the quickness of the pulse was always in proportion to the extent and severity of the disease. The exceptions to a correspondence between the number of the pulsations and that of the respirations, were quite numerous. But our limits will not allow us to follow our author any farther in this article, though it should be faithfully studied by the reader. The sections on the state of the blood and urine, are particularly interesting, but we can only stop to notice a few of the modifications of the symptoms of the disease when it comes on in the course of other affections. Of 47 of these cases, in 26 there was no pain in the side. At the same time the dyspnœa and the number of respirations are not in proportion to the extent of pulmonary lesion. The characteristic expectoration was wanting in 20 of 26 of these patients. The disease may be recognized almost always by the physical signs. In adults a sudden augmentation in the frequency of the pulse generally draws the attention of the physician to the disease, and an increased temperature of the skin is almost always found at the same time. An inflammation of the healthy lung coming on in the course of the disease of the other, is almost always to be recognized by the aid of physical signs, and these generally are the only ones by which the invasion of the disease is marked.

We pass over the sixth chapter, on the course of the disease, to the seventh, on its termination. Great importance is attached by M. Grisolle to the returning crepitous ronchus as a symptom of resolution. In some cases under his observation it has existed only for a few hours, so that although in some patients bronchial respiration at one visit had been replaced at the next by a feeble respiratory murmur, he is not prepared to say, that in the interval between his two visits there was not any crepitous ronchus. Though the progress of resolution at first be rapid, several weeks often elapse before the lung

recovers perfectly its elasticity. Thus, of 103 patients who left the hospital from the 20th to the 55th day, able to resume their occupations, in 37 only were the resonance and respiration perfectly healthy. M. Grisolle had attributed the feeble respiration and the rales found in convalescent patients, to œdema of the lungs, till he had had an opportunity of inspecting the organs of one of these patients. He found the pulmonary tissue in this case of a dark-red color, still somewhat friable in points, drier, less supple, swimming in water less perfectly, but not œdematous. Is the commencement of resolution marked by local or by general signs? Of 192 patients, in 94 a diminution of the febrile symptoms took place exactly at the same time with an improvement in the physical signs. In 72 others it was not till the febrile symptoms had subsided for two or three days, that any improvement could be detected by auscultation and percussion; whilst in 26 patients the pulse continued to be as quick and the skin as hot, when the local symptoms were disappearing. M. Grisolle examines with great care the question of crises and critical days. In 22 patients copious sweats accompanied the resolution of the inflammation, in 6 others convalescence was accompanied by an eruption of herpes on the upper lips. Of 38 patients, in only 5 was the amelioration marked by spontaneous deposit from the urine. In several others a more or less copious deposit was determined by nitric acid a day or a few hours before the announcement of convalescence in other ways. In 2 cases a hemorrhage preceded the commencement of a return to health. As to the doctrine of critical days, our author has proved its inadmissibility.

The termination of pneumonia in suppuration is not recognizable by any of our means of exploration. M. Grisolle considers this subject very fully, and such is his conclusion. The seats of the disease and the age of the patients appear to have an influence on the rapidity with which the inflammation passes from the second to the third stage. Grey hepatization of the upper lobe was found at an earlier period than that of the lower. The mean age of the subjects in whom there was simply red hepatization, was 41 years; that of those in whom the lungs were in the two stages, was 48; whilst those whose lungs presented only the grey hepatization, were on the average 51 years of age. Inflammation of the upper lobe in the very feeble and the aged, also more frequently terminates in abscess, than when the disease exists under opposite circumstances. Thus, of 16 cases of pulmonary abscess, in only 2 were the subjects attacked by

the disease when strong and in good health. Nor is this termination of pneumonia always to be recognized by physical signs, as is shown by several cases on record, and brought forward by M. Grisolle. He has not found any case, either amongst those observed by himself, or of those recorded by others, which has resulted in a return to health. Still he is far from denying the possibility of such an occurrence. He only says, that in the present state of our knowledge, there is no sufficient evidence of such a recovery. Laennec, it is well known, has expressed an opinion that gangrene is hardly to be considered as one of the modes of termination of pneumonia. M. Grisolle has seen 9 or 10 cases of gangrene, but in none of them was the disease consecutive to a simple inflammation of the lungs. The 305 cases of pneumonia which he analyses in his book, all terminated in some other way, and of 70 cases of pulmonary sphacelus, reported in the books and journals of the last 25 years, in only 5 was the disease preceded by pneumonia. In only one of the cases observed by our author, has the disease assumed a chronic form. Nor has he been able to obtain any materials for a history of chronic pneumonia from other sources.

The course and termination of consecutive pneumonia is considered in an article by itself, and then we come to the eighth chapter, on the complications of pneumonia. Of 247 patients, in whom the condition of the pleura was accurately observed, in 31 there was undoubted evidence of the existence of an effusion, which, however, did not appear to moderate or circumscribe at all the pulmonary inflammation. The analysis and comparison of his cases proved to M. Grisolle, also, that this complication did not modify essentially the course of the disease, nor its anatomical characters.

Bronchitis comes on in the course of the disease in a quarter of the cases, and with a seven fold greater frequency in men than in women. Of 58 patients in whom the condition of the heart was examined every day, 12 presented symptoms referable to this organ. Amongst these were three cases of pericarditis, and in 8 others the sounds of the heart were modified. But neither in these, nor in the character of the pulse in the same cases, does M. Grisolle find any thing like positive proof of the existence of fibrinous clots in the heart, to which such symptoms have been referred by M. Bouillaud. Jaundice has been observed by our author 20 times in 277 patients. This was the only symptom indicative of disorder of the liver in six-sevenths of these cases. Of 290 patients, 27 were delirious at

some period of the disease, and adding to these cases those to be collected from different writers, so as to have 435, in one-eighth there was more or less of delirium. This symptom was more frequently met with in males, in the proportion of 21 to 5. Pneumonia of the summit is not more frequently accompanied with delirium than that of the base. In two-thirds of the cases, this symptom could not be explained by any lesion of the brain or of its membranes, nor is any connection to be traced between this symptom and a more extended pulmonary lesion. In fact, in many cases no cause for the delirium can be discovered.

The forms or varieties of the disease are considered by our author in his ninth chapter. In bilious pneumonia, the complexion is yellow, there is a bad bitter taste in the mouth, a dull headache, a dull pain at the epigastrium. M. Grisolle has observed 10 such cases in six years. Laxative remedies are followed in these cases by great relief. Our author also admits a typhoid, a catarrhal, an intermittent, and a latent pneumonia. Under this last form he gives the history of an old woman, who came to see him to ask him for a laxative, as she had lost her appetite. The woman manifested no appearance as if suffering under a severe disease. She had no pain, her skin was cool, and a slight frequency and irregularity of the pulse might be explained by an old disease of the heart. The patient ate and walked about a good deal in the course of the day; towards the close of it she seated herself and died suddenly. At the autopsy more than half of the right lung was found to be in a state of grey hepatization. From this and other cases, M. Grisolle takes occasion to remind his readers, that very slight symptoms in the aged should give rise to anxiety in the physician, as in them most extensive and most important lesions sometimes give rise to but few and trifling symptoms.

We pass over the two following chapters, on convalescence and the causes of death, to the twelfth, in which our author treats of the influence of pneumonia to produce, and modify the course of, other diseases. What effect has it on tuberculous disease? We know that many observers of the present day, have expressed an opinion, that in the lungs tuberculization and inflammation are intimately connected. M. Grisolle has studied this subject with great care. He questioned 72 phthisical patients on their anterior diseases. Two of them had had all the symptoms of pneumonia three or four years before the first appearance of their tubercular disease, and in two others this last affection appeared to succeed immediately to an acute in-

flammation of the lungs. M. Louis obtained similar results from 80 patients. From these facts, and from others observed by himself or by different writers, M. Grisolle concludes that pulmonary consumption succeeds immediately to pneumonia, in less than a thirtieth of the patients who have been observed with reference to this point; 2dly, that even in these cases, the probability is, that the tubercles had been deposited in the lungs before they were inflamed, and had perhaps even excited the inflammation; 3dly, that in some very rare cases, such as have never fallen under his own observation, where miliary tubercles have appeared to be developed in hepatized lungs, the pneumonia has acted as an occasional and not as a direct and existing cause. And that pneumonia does not often even excite the deposite of tubercles in the lungs of those predisposed to such disease, must be inferred from the fact that of 305 patients observed by our author, 22 presented what are called the constitutional signs of phthisis, and more than half of them had lost several of their near kindred by the disease, and yet every one of these individuals recovered perfectly. From an analysis of the histories of 11 tubercular patients whose lungs, already diseased, were affected with acute inflammation, the conclusion of our author is, that acute inflammation in a tuberculous lung is generally limited to a small extent and to the neighborhood of the tubercular disease, that it is not accompanied by severe symptoms, that its course is regular and its mean duration from 12 to 15 days, that it rarely proves fatal, and that it does not appear to aggravate the primitive disease. Corvissart, and within a few years, M. Bouillaud, have attributed an active influence to pneumonia in producing organic diseases of the heart; but M. Grisolle, after a full discussion of the subject, and an examination of all the facts to which he has found access, can admit that such an influence exists only in very rare cases. But that pneumonia has a more unfavorable influence in pregnancy than almost any other acute disease, cannot be disputed. Of 15 pregnant women attacked by the disease, 9 died.

Diagnosis.—This chapter is very elaborate and very satisfactory. The existence of the disease; the parts of the lungs attacked and the part threatened; the degree and the terminations of the disease; its symptomatic and anatomical form; its distinction from other diseases; the diagnosis of secondary pneumonia, are treated of in separate sections. A fine crepitant rale is regarded by our author as pathognomonic of the disease. He does not, however, agree with MM. Barth

and Roger, that the existence of a crepitous rale under one of the clavicles, when no morbid signs can be elicited from other parts of the lungs, is characteristic of inflammation around a deposit of tuberculous matter. He has seen two patients in whom these stethoscopic signs were confined for several days to the infra-clavicular space, and yet there was no reason to believe in the existence of any tuberculous disease. Again, in 10 patients, who were attacked by pneumonia in the course of tuberculous disease, the acute inflammation followed the same course as in other cases—that is, the first signs of the disease were heard in the sub or supra spinous fossæ, and only subsequently under the clavicle. It is correct, however, to say, that a crepitous rale heard over a small circumscribed space of the upper part of the chest, justifies a suspicion that the patient is attacked by pulmonary consumption. Bronchial respiration, according to our author, is by no means pathognomonic of the disease on which he writes. It exists in dilatation of the bronchi, in apoplectic and cancerous disease, as well as in red and grey hepatization. In the adult and aged, pleuritic effusions are also accompanied by bronchial respiration. We were glad to see this result of our author's experience; for, notwithstanding the opinions expressed by many authors, that bronchial respiration was so characteristic of inflammation of the lungs, and although others, admitting the respiration to be so modified in pleuritic effusions as to partake of the bronchial character, have given the means to distinguish between it and true bronchial respiration, we have not been able to obtain, in this way, a diagnostic mark between pleurisy with effusion, and pneumonia. And we believe, too, that mistakes have often been committed in cases of pleuropneumonia, by supposing a great part of the lung to be hepatized, which in reality was only compressed by an effusion. Another question examined by our author, and which had already been decided by Laennec in the affirmative, is as to the possibility of detecting central pneumonia, particularly where the disease occurs in a lobular form. He here relates two cases, in which a thin stratum of healthy lung, intervening between the ear and an extensive hepatization, completely prevented any morbid sounds being heard, on careful and repeated examinations. He introduces other facts to confirm the opinion, which would naturally be drawn from these, that auscultation is not to be trusted when the disease is not seated in the surface of the lung. Our author, from his facts, is also led to the conclusion that carnification and splenification are not to be distinguished with cer-

tainty from hepatization. We are glad to see that M. Grisolle, in considering the difference in symptomatology between pneumonia and pulmonary œdema, expresses his surprise at the generally received opinion that a sub-crepitous or mucous rale is a characteristic sign of the latter disease. He remarks very properly, that a rale can only be determined by some disease of the bronchi or of the vesicles, and that certainly an effusion of water in the cellular tissue, outside of the air tubes, cannot give rise to a ronchus of any sort.

Prognosis is the subject of the fourteenth chapter. The old assertions and aphorisms which have been handed down in the profession are examined by our author. He takes nothing for granted, but adding to his own facts such others as he can collect, he make a severe and careful analysis of the whole, and gives us the results. The different points are discussed in different sections, of which there are twenty. The influence of age may be seen in the following table, and these results are confirmed by a wider experience. Of 63 fatal cases of pneumonia observed at Geneva, in the year 1837,

7 were in patients under 1 year,			
4 in those from 1 to 3 years,			
3	"	"	3 " 10
1	"	"	10 " 20
2	"	"	20 " 30
2	"	"	30 " 40
6	"	"	40 " 50
12	"	"	50 " 60
12	"	"	60 " 70
11	"	"	70 " 80
3	"	"	80 " 90

We see, then, how fatal a disease is pneumonia, when it occurs in the first months of infancy; that it is much less so in the following years, there being only 5 deaths in those between 10 and 40 years of age. The records of Salpêtrière and Bicêtre confirm most fully the results of the above table, as to the very great mortality of the disease in old age. If men are more frequently the subjects of pneumonia than women, the disease is decidedly more fatal in the latter. According to M. Grisolle's analysis the mortality in subjects of a feeble, broken down constitution is twice greater than in the strong and vigorous. This fact harmonizes with the greater mortality in children, women and the aged. In 17 drunkards, in whose histories all other circumstances but the habitual use of alcohol were, so far as

could be ascertained, favorable to recovery from the disease, the mortality was one-fourth. M. Grisolle cannot discover any influence from the seasons of the year. His experience goes to confirm the general belief of the great difference of mortality in different epidemics. In two groups of 70 patients each, the one of disease of the right, the other of disease of the left lung, the other circumstances in the histories of the patients of the two groups being as nearly as possible the same, the mortality is exactly the same, one-seventh. In double pneumonias the mortality was 7 in 16, though it must be remembered that the average age of these patients was 10 years greater than that of the others. The mortality of pneumonia of the upper lobes in patients of from 36 to 38 years of age, was one fifth; whilst in similar patients, where the disease was of the lower lobe, it was one-eighth. This result does not agree with the opinion of M. Andral, but it is confirmed by the researches of M. Lestier. No certain indications for the prognosis are to be obtained from the frequency of the respiration, nor from that of the pulse. An abundant deposit from the urine, not albuminous, is an indication of recovery. The following table shows what are the conclusions as to prognosis in cases where the treatment is commenced at an early, and in those where it is deferred to a later period.

In patients who entered the hospital during the 2 first days of the disease, the mortality was	1-13
In those who entered on the 3d day,	1-13
4th,	1-8
5th,	1-8
6th,	1-4
7th,	1-3
8th,	1-2
9th,	1-3
10th,	1-3

The prognosis is not a grave one in patients affected with hypertrophy or valvular disease of the heart, but who are able to attend to their ordinary affairs. Thus of 6 such patients, only one died, and he was more than 70 years of age. Nor is the prognosis grave in phthisical patients where the disease is not much advanced.

Treatment.—The reproach often addressed to French pathologists, that they consider therapeutics as comparatively unimportant, and neglect them, will not apply to M. Grisolle. A large part, in fact nearly a quarter of his book, is devoted to this subject. And

his results as to the effects of remedial agents in the disease are obtained by the same careful analysis of facts, on which he has depended for answers to inquiries on other points. He remarks at the outset, that the proper treatment of pneumonia cannot be a simple one, nor one of formulas. Individual cases of the disease differ, and the treatment must be varied according to the different circumstances. So, when we inquire as to the efficaciousness of remedial agents, and compare them, we must take into our account a great variety of circumstances which may exercise a modifying influence. Our author begins with bloodletting, and he asks first, is it useful in the treatment of pneumonia? M. Biett abstained from it, and from other remedial agents, except poultices and demulcent drinks, in the treatment of all the pneumonic patients who were placed in his wards during a year. Nearly all of them recovered. M. Magendie boasts of the success of a similar practice in his own hands. M. Grisolle, desirous to obtain some facts which might enable him and others to decide on the safety of the course pursued by the above gentlemen, did not feel himself at liberty to try the experiment directly on the severely ill. In the year 1840, however, 11 patients, one only, 56 years of age, came under his care, and as the general symptoms were mild, and the local symptoms indicated that the disease was of limited extent, he kept them in bed without food, giving them demulcent drinks, and occasional laxatives. These persons came into the hospital on the fourth day, as averaged; in 9 of them the signs of red hepatization at that time were unequivocal; in 2, the disease appeared to be still in the first stage. The characteristic expectoration in these cases continued, on the average, till the ninth day, the pain in the side still longer, and altogether the local symptoms were present during a period of time which was not at all in proportion to the extent and severity of the disease. There was an interval of four days between the complete cessation of the fever, and the commencement of resolution as indicated by physical signs. To compare with this group, M. G. selects another, also of 13 patients, of about the same age, and in whom the disease was of about the same severity and extent. One or two general or local bleedings were employed in each case, and on the fourth day of the disease, as averaged. The characteristic sputa had ceased before the close of the sixth day of the disease. The pain in the side, very severe in some cases, was less in every case after the bleeding, and disappeared wholly on or before the eighth day. There was no fever

after the seventh day, and 24 hours later the patients were in full convalescence. The physical signs indicated the commencement of resolution at the same time that the fever ceased, and on the 12th day the lung appeared to be again in a healthy condition. There is certainly good evidence here of the usefulness of bleeding in mild cases of the disease. Our author finds no data to enable him to say what is the influence of this remedy to diminish the mortality.

Ought we to bleed in every case of pneumonia, is the next question examined by M. G. He cites from those, who have made the disease in the very young and very old their especial study, enough to show, that bloodletting is not infrequently advisable in such cases. He has observed himself 6 patients, with constitutions broken down under the influence of misery, bad food, grief, excesses, or previous disease, in whom venesection was attended by an aggravation of the symptoms, and a state of prostration increasing every time the vein was opened. Five of these patients died, whilst of another group of 6 patients, who resembled those of the first group as closely as possible, but in whom an application of cupping-glasses for a very moderate quantity of blood was the only species of bloodletting employed, all recovered but two. M. Grisolle does not find in the commencement of the menstrual discharge, nor in a state of pregnancy, nor in profuse perspiration, sufficient reasons why he should abstain from bleeding. Is bloodletting to be employed at all periods and in all stages of pneumonia? M. Grisolle cannot define the period at which bleeding is inadmissible. He has seen cases where this remedy was called for on the 12th, the 15th, the 17th day of the disease. He has verified the correctness of the remark of M. Louis, that in patients who were bled during the first 4 days of the disease, convalescence commenced four or five days earlier than in those who were bled for the first time at a later period. M. Andral has expressed an opinion, that bleeding may be had recourse to in the third stage of the disease. As long as there are no means of distinguishing, during life, the state of grey hepatization, the question cannot be settled. M. Grisolle has seen four patients with purulent infiltration, in whom a loss of blood was followed almost immediately by a fatal result. How many bleedings should be made, and with what interval? We cannot follow our author in his examination of the opinions and practice of different writers, in different periods and countries. We ought not, however, to pass over in this way his criticism of the treatment proposed and employed by M.

Bouillaud, who gives a formula of bleeding applicable to all cases, by the use of which he professes to cut short or strangulate the disease. Thus he recommends 4 bleedings, each of from 12 to 16 ounces in the first 24 hours. These are to be followed at short intervals by two, three, or four more bleedings, according as the disease subsides more or less perfectly, so that the patients are to lose in all four or five pounds of blood. To prove that the advocate of this treatment applies it indiscriminately to the weak and feeble, as well as to the strong and vigorous, a case is cited from his clinical reports, of a man much exhausted by a diabetes mellitus of more than a year's standing, who was attacked in the course of this last complaint by pneumonia. He was bled, however, three times, 12 ounces were taken each time, and he died before the close of the first week. M. Bouillaud regrets that a fourth bleeding had not been practised; that the *strangulating* treatment had not been fully carried out, and takes occasion to say, that in future he shall apply his formula inflexibly to any similar case that may come under his care! We must admit, then, that M. Bouillaud has laid down simple rules of treatment, so exactly stated, so general, that even the unprofessional person would be able to manage the disease. Now it is with doing this very thing; this attempting what is manifestly impossible, in view of the complication of the subject and of our imperfect knowledge of it, that M. Louis, and what has been called the numerical school, have been reproached. M. Grisolle, who professes to be of this same school, takes occasion however to inveigh strongly against any attempts of this sort. He sets forth the great variety of circumstances, the endless differences in individual cases of disease, and as he goes on to examine the statistical reports by which M. Bouillaud endeavors to prove the influence of his treatment to diminish the mortality in the disease, and to abridge its duration, we see very clearly that the clinical professor of La Charité is not to be depended upon for careful observation nor for exact analysis. To let our author speak in his own words,—“In order to prove the efficaciousness of any treatment,” we must not be contented with merely adding up the number of “deaths and those of recoveries, and then drawing conclusions, as this would be a mere calculation requiring little intelligence, and having less scientific value than the approximate results which would be given by an attentive observer. We must repeat it, inasmuch as there are so many who will not understand it, that medical statistics, as understood by the school of observation,

do not consist in putting numbers together, but in the analysis of facts before they are counted. Every circumstance, whether its effects on the disease be remote or direct and immediate, should be taken into the account. In fact, we should adopt the remark of Zimmerman, one of the most philosophical of physicians, that the only method of becoming acquainted with an object, is to examine it in detail, to reduce it to its simplest elements, until analysis can be carried no farther." That M. Bouillaud has not acted in this manner, is most clearly shown by our author. Thus an account of 75 cases has been given by a disciple of M. B., which is published in the memoirs of the Academy of Medicine. The mortality in these cases was 1-9. But on examining them, in 25 the treatment by repeated bleedings was not employed. Excluding these, therefore, there remain 49, of whom 6 died, which gives at once a mortality of 1-8. But to look at these cases a little more in detail, it will be found that the age of these patients on the average was less than 33 years. Consequently, as to age, these patients were in most favorable circumstances. And they were so, too, as to the extent and severity of the disease, as in 16 it had not yet reached the second stage, and in only 13 was the stage of hepatization perfectly established. Again, of M. Bouillaud's patients only .08 were females, and yet the mortality in this sex is the greatest. The results, therefore, may be explained in great part by other circumstances, and are not to be attributed merely to the remedial agents. And so as to the duration of the disease, which according to M. B. is reduced one-half, when we examine into his cases published a few years since, we find that he has given the duration of the treatment instead of that of the disease. Thus 22 patients were said to have been ill only 9 days, but when the days of illness previous to their entrance into the hospital were added, the duration of the disease became 15 days instead of 9. Subsequently he abandoned this mode of computation, but instead of taking the signs of convalescence, agreed upon as such, by other authors, he is satisfied to take, as the last day of the disease, that on which the characteristic signs of the fever have almost disappeared. In this way he gains two or three days. After these explanations, M. Grisolle gives us the results from the cases observed by himself, and institutes a comparison between them and those of M. B. In these patients bloodletting was proportioned to the age and constitution of the patients, to the form, severity, and extent of the disease, nor was it repeated, except with reference to the effect produced the

first time. Some of these individuals lost only 6 or 8 ounces of blood; in others depletion was carried to the extent of 9 or 10 pounds. M. Grisolle divides his patients into two classes. In the first he puts 50 patients, in whom the disease was still in its first stage. Sixteen of these individuals were females; 4-5 of them had a moderately strong constitution, the others were feeble persons. The average age was 40. In 36 of these cases, including 3 of double pneumonia, the symptoms indicated such a degree of severity in the disease, as to inspire fears about the ultimate recovery of the patients. The mortality of this group was 1-10; convalescence commenced on the average about the 10th day, and at the end of the third week the patients were able to resume their ordinary occupations. Of 22 patients in whom the inflammation of the lungs was still in the first stage, M. Bouillaud only lost one. But they were younger subjects, their disease was much more limited and less severe, and yet convalescence in these patients had hardly commenced the 10th day. They lost on the average 3 1-4 pounds of blood.

M. Grisolle's second class includes 152 patients (143 men, 9 women), in whom the pneumonia had passed to the second stage when the treatment commenced. The average age of these persons was 25; their constitutions more or less robust in 3-4 of the cases, was feeble in the others. The disease was severe in all; in 12, both lungs were affected. The quantity of blood taken varied very much in the different cases, but it would average 3 pounds; 52 of these died, so that the mortality is to be estimated as a little more than 1-6. In 69 of the cases of recovery, the 12th day was the average period for the commencement of convalescence. Our author goes on to study his cases more in detail; to inquire how far the disease and how far its symptoms have been modified by the treatment. We can give only his conclusions. The disease itself was not immediately arrested in any case, and no one of the symptoms (except the pain in one or two instances) was removed by the bloodletting. The relief after the bleedings of the first days was not so marked as that experienced by those patients who were bled for the first time at a later period of the disease. MM. Chomel and Louis had previously established this fact, and M. Grisolle adopts their explanation, that in the latter cases the disease was approaching to its natural limit when the remedy was employed. Would more copious bloodlettings have been more efficacious? A careful examination of the cases published by M. Bouillaud shows very clearly that his pa-

tients lost two pounds of blood more than did those of M. Grisolle, and without any benefit, any abridgement of the disease itself, any alleviation of the symptoms.

From what precedes, no one can doubt that bleeding is a useful remedy in pneumonia, but at the same time it must be allowed that its efficaciousness has certain limits, and is less than it was formerly supposed to be. The treatment by the tartrate of antimony has been much lauded, and M. Grisolle gives the results of those who have tried it, and endeavors to appreciate the evidence in its favor to be found in the writings of different authors before submitting the results of his own experience. He has 154 cases, in which this remedy was employed as recommended by the Italian school, but for examination he divides them into three classes. In the first are 44 patients, who were treated in this way from the first, bloodletting not having been used at all. In 35 of these patients the lung was hepatized when they came under treatment. All of them were alarmingly ill. The pulse was less resistant than it often is, but in none of them were the symptoms from the circulation such as to forbid bleeding. The treatment was commenced the fourth day on the average. The drug was employed in divided doses, so that the patient took the first day from 4 to 6 grains in a demulcent mixture. If the immediate effects of the medicine were very great, some narcotic syrup was added to the potion of the second day, and the period during which the remedy was continued averaged 3 1-2 days. The immediate effects were marked in every case, the bowels suffering rather than the stomach. Six of these 44 patients died, a mortality of 1-7, whilst in the cases collected by M. Grisolle from different authors, the mortality is 1 in 12. In 23 of M. G.'s patients the pain was relieved the first day, and in 5 who suffered greatly from the pain, it disappeared at once and entirely. In 27 of the 38 cases of recovery, the pulse had fallen from 10 to 20 beats at the close of the first 24 hours. In 18 patients the physical signs at the close of the first day, indicated the commencement of resolution. The mean duration of the disease was 10 days. Twenty-eight who remained that time in the hospital, were able on the 20th day to resume their labors as carpenters and masons. There was no proportion between the rapidity of the recovery and the immediate effects of the tartar emetic. In half of the patients who died the remedy at first seemed to act favorably in the disease.

M. Grisolle's second class consists of those in whom the treatment

of Laennec was employed. The patients were bled, once or twice according to the symptoms, and then were put upon the tartar emetic. Eighty patients are included in this class, their age in the average being 35 and a half years. The lung was hepatized more or less extensively in every case. The fifth day was the period at which, as averaged, the patients first came under treatment, and the sixth or seventh day that in which the tartar emetic was first administered. The average duration of this treatment was 4 days. Ten of these patients died, a mortality of one-eighth. The principal symptoms of the disease disappeared as rapidly as in the patients of the first class. In two-thirds of the patients there was a rapid progress towards recovery at the close of the first 48 hours of this treatment. The convalescence of the 70 patients who recovered, was established on the 14th day as averaged. The comparative length of the disease in these cases is to be explained, however, by its severity, and by the later period at which the patients first came under treatment. And the mortality in the third class is to be explained in a similar manner. These patients were 20 in number, so weak and so exhausted that bloodletting was impossible. Eighteen of them died. The beneficial influence of the tartar emetic in these cases is proved by the rapid amelioration in the symptoms which followed its administration. In 9 of them, whose lives were in the greatest peril, the general and local symptoms became so favorable after the first, second, or third potion, that great confidence of their ultimate recovery was entertained.

The mode of administering the tartrate of antimony, its effects, contra-indications to its use, accidents determined by it, are all fully considered by our author. He then examines how far other preparations of antimony are efficacious. Several other remedial agents are now passed in review, and then under the class of hygienic remedies several others are examined by our author. Of blisters, that they are useless and inefficacious, cannot be demonstrated from his facts because there are not enough of them. However, from an analysis of the 38 cases in which he has seen them applied, he draws the following conclusion. Whatever be the part of the body to which they are applied, and whatever be the period of the disease in which they are used, no advantageous influence on the termination, the course or the duration of the disease is to be hoped for. The only exception to this general rule is, in cases where pain in a limited part of the chest continues during the convalescence, the application of a

blister will generally be followed by its disappearance. M. Louis has recorded his experience to the same effect, and we must say that such too have been the results of our own observation of the effects of epispastics.

The articles on the treatment of consecutive, typhoid and bilious pneumonia are full and interesting, but we must hasten to a close. In M. Grisolle's general conclusions upon the treatment and mortality of the disease, he again cautions his reader not to consider it identical in all cases ; and not to treat by the same means patients in whom the anatomical condition of the lungs, as far as this can be ascertained by physical signs, may be nearly or exactly the same. The source of the principal indications for treatment is to be found in the general symptoms. Bleeding and antimony, properly combined, are, according to M. Grisolle, the true remedies in the disease. The bleeding may be local or general, according to circumstances ; the local symptoms sometimes yielding rapidly after an application of cupping glasses or leeches. We will close this article by citing the concluding sentences of the volume. "It is with great confidence that I recommend the treatment which commences with bloodletting, and follows on with the administration of the tartrate of antimony in large doses in all those cases where the condition of the individual or the peculiar features of the epidemic do not forbid. The care with which I have studied the subject makes me hope that I am not deceived, and I think that I can say with Sydenham, that the treatment which I recommend is that which I should prefer in my own case were I attacked with the disease, the history of which I have thus traced."

Bibliographical Notices.

I.—*Lectures on the Theory and Practice of Physic.* By WILLIAM STOKES, M.D., Lecturer at the Medical School, Park Street, Dublin, and JOHN BELL, M.D., Lecturer on Materia Medica and Therapeutics, &c. Philadelphia. Second Edition, 2 vols. Barington & Haswell, 1842.

IN 1840, Dr. Bell published his first edition of Dr. Stokes' lectures with large additions by himself. So early an appearance of a second edition is alone a sufficient expression of the favorable reception with which it met. His second edition contains still more copious additions of his own, until the work has now assumed the form of a quite complete system of medicine, equally valuable as a text-book to the student, and a book of reference to the practitioner. All the matter which he has himself added, and that which he has incorporated from other works of Dr. Stokes, he has thrown into the form of lectures, by which the uniformity of the work is preserved, and a didactic familiarity and ease is gained, which often renders such works more readable and more acceptable to the student. The arrangement of the subjects, and the method in which they are treated, is good, except perhaps that we should agree with Dr. Bell in the doubt, which we see by his preface he has felt, whether in a work of which the peculiar value is its practical value, it is useful to devote quite so large a space as he has done to such a disease as the cholera, of which there is little likelihood that the reader will ever see a case, and for a knowledge of which, as a matter of curiosity or proficiency in his education, he can refer to more elaborate treatises elsewhere, while the space, which is limited, might be occupied by a more full examination of other diseases with which he will have to be more familiar. Condensation, and the exclusion of all extraneous matter, and such as is not of practical importance, should be prominent objects in the compilation of such works. Many important subjects are treated with great clearness and fulness. Among others we would notice cholera infantum, a disease of such fatal interest to us, and for a true description of which we look in vain through the

works of English or continental writers. Diseases of the kidney, also, to which so much attention has of late years been given, he has treated as methodically and definitely as conflicting theories and the present state of our knowledge of them will admit. Excepting a lecture upon neuralgia, and one upon epilepsy, Dr. Bell has left the nervous system to Dr. Stokes. We know of no book of the kind which we would more readily place in the hands of a student, or to which we would more readily refer the practitioner for a hasty investigation of a subject.

II.—*Physician for Ships—containing Medical Advice for Seamen and other persons at Sea, in the treatment of Diseases, and on the preservation of Health in Sickly Climates.* By USHER PARSONS, M.D., late Surgeon in the U. S. Navy, &c. Third Edition. Boston. 1842. Charles C. Little & James Brown. Pp. 216.

THE first two editions have rendered this little book too well known to require any comments of ours. This third comes augmented by at least a fifth, comprising a more extended account of the diseases of sickly climates, and a very valuable chapter upon the choice of a residence for consumptive patients. This little book is in fact quite invaluable, and no ship should sail without it. We are convinced those ships have the best crews and make the best voyages, where owners and masters consult for the comforts of the sailor when well, and make provision for him when disabled. We would suggest for addition to another edition, a description of some of the chemical substitutes for yeast, which may be found in the late Glasgow Report, and which we should think might be usefully introduced both into our military and civil marine.

III.—*The London Dissector.* From the last London Edition. Revised and corrected by EDWARD I. CHAISTY, M.D., late Demonstrator of Anatomy in the University of Maryland. Philadelphia. Ed. Barrington & Geo. D. Haswell. 1842.

WE have just received the *London Dissector*, republished in Philadelphia by Dr. Chaisty. It appears in a very convenient form for

the use of the student. Its descriptions are very clear and concise, and, so far as we have discovered, it leaves no important point unattended to. The absence, however, of illustrations is a serious defect in a demonstrative work upon anatomy. A few lines in a wood cut will often facilitate greatly the young anatomist, and give him a clearer conception of a part than pages of verbal description; while the additional expense which it would have given to the work would have been of trifling importance compared with the advantage gained.

IV.—*Outlines of Human Physiology. Designed for the use of the Higher Classes in Common Schools.* By GEORGE HAYWARD, M.D., Professor of the Principles of Surgery in Harvard University. Fourth Edition. Pp. 216. Thomas W. Webb & Co. Boston. 1842.

WE are gratified to see that this popular little work has reached a fourth edition, both because its merit most fully justifies its success, and because it indicates an interest felt by the public in the subject. One great reason, no doubt, why more attention has not heretofore been given to the study of human physiology, is that it has not been presented in a form at once agreeable and intelligible to the youthful mind. This deficiency is now supplied, and we trust that an increased demand for the work will continue to indicate an increased attention to the subject.

V.—*A Treatise on Diseases of the Heart and Great Vessels, and of the Affections which may be mistaken for them, &c. &c.* By J. HOPE, M.D., F.R.S., &c. &c. First American from the third London Edition. With Notes and a detail of recent experiments, by C. A. PENNOCK, M.D., Attending Physician to the Philadelphia Hospital, Blockley. Philadelphia: Haswell & Johnson. Pp. 572.

A bibliographical notice by no means allows us space to comment upon the work before us. This third edition comes enriched with a third part new matter, the result of over one thousand cases observed by the lamented author, who too soon has sunk under labors which have found but few parallels. It is of the part the American editor,

Dr. Pennock, has taken in the book, that we wish chiefly to speak. Unlike the generality of American editors, whose editorship consists only in the revision of the proof sheets, Dr. P., in addition to a series of most valuable experiments, instituted by himself and Dr. Moore, of Rochester, N. Y., gives us interspersed in the text, the opinions and discoveries of Dr. Williams, Bizot, Bouillaud, Clendinning, &c., together with his own remarks upon their comparative value. His work is very creditable to all concerned, and foreign authors would have no reason to complain of American pirates, if their performances were improved as much as is the one before us.

VI.—*The Medical Student's Guide. Being a compendious view of the Collegiate and Clinical Medical Schools, the courses of Private Lectures, the Hospitals and Almshouses, and other Institutions, which contribute directly or indirectly to the great Medical School of Philadelphia, 1842-3.* By HEBER CHASE, M.D. Philadelphia. J. G. Auner.

THE title of this little work sufficiently details its contents. It is on sale at Ticknor's, and should be purchased by any one desirous of availing himself of the many advantages which Philadelphia, from the extent of its institutions, alone offers.

VII.—*The Obstetric Guide.* By JOSEPH WARRINGTON, M.D. Philadelphia. J. G. Auner. 1842.

THIS is an exceedingly useful little manual, intended, as the author wisely remarks, not to take the place of the more elaborate treatises, but to revive in the memory of the student the instruction given there and at lectures, and to facilitate the practical arrangement of his information.

VIII.—*The Select Medical Library (New Series), and Bulletin of Medical Science.* Edited by JOHN BELL, M.D., &c.

THE October number contains the well known lectures of Dr. Blundell upon the Principles and Practice of Surgery.

Scientific Intelligence.

EXTRACTS FROM THE REPORTS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

SEPT. 12, 1842. *Spina Bifida in a boy 16 years of age, Spinal Marrow terminating at the 4th Dorsal Vertebra.*—Dr. Snow reported the following case.

N. T. was born in June, 1826, of decidedly scrofulous parents. At birth he was discovered to have complete paralysis of the body below the ribs. In the middle of the back there was perceived a small tumor, having upon its surface much the appearance of an old cicatrix without discoloration, and below this, in the lumbar region, an ulcer half the size of the hand, looking, as the mother said, like the outside of a fig. It nursed, however, as well as any child, and appeared to enjoy perfect health. The ulcer continued an open running sore for about six months, and then healed up entirely. His fæces were always passed involuntarily. They were generally quite costive, but not otherwise peculiar. His urine was also involuntary. It was always perfectly limpid as pump water, and never, as the mother assured him, had any sediment nor any urinary smell. It was much more copious than natural, until a short time before death, when it became scant, but without altering its character. His appetite was generally good, and he was not troubled with indigestion. In respiration there was as much action of the chest as in well formed-children. The sensation appeared to be perfect in the arms, and in the chest as low as the last ribs, except that he could not be tickled here nor in the axilla, as children commonly can. The tumor in the middle of the back was exceedingly tender, but the ulcer neither at first, nor when it broke out the second time, appeared to have the least sensibility. No notice was ever taken of caustics, nor of any other application which was made to it. The right leg was frequently swollen from œdema, but the left never. They were both always of a natural temperature, and not liable to become cold. Hair appeared upon the pubes when he was between 13 and 14 years old, but he never exhibited any sexual propensities, so far as could be learned. His mind was active, and he learned quickly, but was too fond of fun to apply himself greatly.

About two years before his death, the ulcer in the lumbar region broke out again, unattended by pain, febrile symptoms, or any thing which would

indicate its connection with the caries discovered after death. About three months before death a diarrhœa set in and continued two months. During the last month he appeared to be free from disease, excepting the ulcer, which for a year back had been growing more extensive, and now discharged profusely. He gradually failed, and died without the development of any new symptoms.

The examination was made by Dr. J. B. S. Jackson, who reported as follows :—The surface of the tumor over the middle of the back appeared as if cicatrized ; beneath this was a coarse, white, cellular tissue, which contained no fat like the surrounding integuments, and beneath this a serous cavity, formed by the expansion of the spinal membranes, and partly filled with serum. The wings of the dorsal vertebræ, from the fourth to the ninth inclusive, were separated so that, midway, the little finger could be passed freely about within the cavity, at the upper extremity of which the spinal marrow was distinctly felt to terminate, as usual in spina bifida, by adhesion to the membranes posteriorly, and from this point downwards it was satisfactorily ascertained that the spinal marrow did not exist. Below this fissure the spinal canal was again completed by the union of the wings of the two next vertebræ, those of the last dorsal and first lumbar being also closely approximated. The four last lumbar and first sacral were wide open posteriorly, the wings on the right side being very imperfectly developed and partly fused, whilst those on the left side could hardly be said to exist ; the foramina for the nerves, however, were sufficiently large. Throughout the lumbar region there was found in the situation of the spinal cavity a coarse, white, cellular tissue, surrounded for the most part by a firm membrane which appeared to be an extension of the dura mater, and upon this last the nerves terminated. The wings of the dorsal vertebræ, from the third downwards, were extensively fused, the last being also very irregular ; bodies of the 5th, 7th and 8th formed throughout in two lateral portions. The spine at the dorsal region was strongly bent towards the right side, the bodies of the vertebræ at that part being narrower on that side than on the other. There was also a disease of the two first lumbar vertebræ, about one half of the bodies of these bones having been destroyed by caries, with their intervertebral substance ; some new bone was thrown out upon them anteriorly, and a very considerable quantity of the same upon most of the rudimentary wings of the lumbar vertebræ on the left side, this new bone lying immediately beneath the ulcerated surface which existed during life, so as to be covered by little more than the granulations.

The thoracic and abdominal organs appeared sufficiently healthy ; the liver was rather large and of a pale fawn color, but the lungs were not tuberculous.

The spine was removed as low down as the sacrum, and has been prepared for the Society's cabinet. Dr. J. remarked, that though this was not, anatomically, a common case of spina bifida, yet it was so essentially, and as such it was, so far as he was aware, the most remarkable on record, considering together the age of the subject, and the extent of the malformation.

SEPT. 26, 1842. *Tuberculous Disease of the Spinal Marrow.*—Dr. J. B. S. Jackson exhibited a specimen of the above disease. It was situated at the sixth cervical vertebra, and involved almost the entire substance of the organ at that part, forming an opaque, yellowish, solid, well-defined and uniform mass about as large as the top of the little finger. The spinal marrow was somewhat enlarged at the seat of disease, and was a little softened just above and below it, but was elsewhere quite healthy. The membranes, also, were healthy, except for some thickening of the dura mater at the upper part. In the brain there was a copious effusion of serum, with complete softening of the septum. Extensive tuberculous disease was found in both lungs and in the intestines, besides similar disease in the prostate gland and in the kidneys.

The patient, an Irish laborer, æt. 42, died September 25th. Health quite good previously to the last year, and since then no local trouble except a disease of the ankle joint. The symptoms of spinal disease came on about three and a half months before death, and, when examined on the 13th of August, were as follows: diminished sensation, with hardly a trace of voluntary motion in the lower extremities, the upper being very much less affected; very frequent and involuntary contractions of the right lower extremity, tending to draw the limb up into a strongly flexed position, and attended with very severe pain; some contractions also of the left lower extremity, but without pain. Even on moving the bed-clothes, the muscles of the lower extremities would be strongly excited, and, in attempting to straighten them when they were drawn up, his suffering was very great. In the upper extremities these spasms were very much less. The bladder was completely paralyzed, so that the catheter had been used daily for the last three weeks. These symptoms continued with but little change till death, the spasms being on one occasion so violent that the patient was fairly jerked out of bed, and fell upon the floor, though fortunately with but little injury. He suffered much also from a morbid sensibility, and from neuralgic pains in the right lower extremity, passing up into the abdomen. Respiration was carried on by the diaphragm, the intercostal muscles seeming to be completely paralyzed. The catheter was used till the last month, after which the urine became involuntary; the dejections, also, were for the most part involuntary, whenever procured, the bowels being very costive. The spine was often examined, but the patient scarcely ever allowed any pain or tenderness there, neither was there any trou-

ble in the head worth mentioning. When first seen his general aspect was sufficiently well, but as the disease advanced, he became exceedingly emaciated, and for some time before death was very much sunken, with sloughs about the sacrum. As to his pulmonary disease, he had no symptoms that led to a suspicion of it; there was occasionally some dyspnœa, but, as it was generally accompanied with a feeling as of a cord about the lower part of the chest, it was attributed to the paralysis; the nurse, on being questioned after the death of the patient, mentioned an occasional, very slight cough during the last few days, but never before.

OCT. 24, 1842. *Cases of Typhoid Fever and Peritonitis, occurring in connection with each other.*—Dr. Hale related the circumstances of a case of puerperal peritonitis in connection with typhoid fever and other diseases, occurring in an elevated, airy, and apparently healthy situation out of town. Two months before, a nephew eight months old had died in the family of cholera infantum, in 36 hours from the attack, which was preceded by a mild diarrhœa of about a week's duration. A female domestic had been ill two or three weeks with a mild typhoid fever, and the patient's daughter, 20 months old, had had a troublesome but not very severe bowel complaint, for about the same length of time; and there had been other causes of unusual fatigue. She was at or near the full time of her second pregnancy, in ordinary health, October 4th, when she received a violent shock from having her little daughter fall down the chamber stairs. The child proved to be uninjured; but the mother was at the moment greatly agitated and became faint. She soon recovered, however, and thought herself unhurt, and rode out a short distance in the afternoon. In the evening labor came on, and at three o'clock in the morning of the 5th she was delivered. The child was dead. It was evidently not killed in the birth; the whole surface was pale and bloodless. There was nothing very remarkable in the circumstances of the labor, unless it were that the pains appeared to be more than usually distressing in proportion to their efficiency. She was tolerably well through the first day, but complained of her head; and the face was flushed. She had an active cathartic the second morning, and after the operation the head was relieved. On the morning of the third day there had been a chill; but there was no pain in the abdomen nor tenderness, pulse soft, not much quickened, lochia free; and as there was considerable nervous restlessness, it seemed doubtful whether this might not be the cause of the chill. In the afternoon there was tenderness, and some fulness of the pulse, and she was bled freely. This was followed by great relief. The circumstances of the night were peculiarly unfavorable. The fever patient had grown worse and become delirious, and her cries disturbed the whole household; and Mrs. L.'s nurse was attacked with severe vomiting and diarrhœa, and was compelled to leave

her. The following morning the pain and tenderness had returned, and all the symptoms were aggravated. She had leeches, calomel and opium, blistering, &c. ; but she grew worse, became delirious, and died the seventh day.

The domestic, a girl 16 years old, had first an abscess in the ear, followed by a mild erysipelas of the face, and then typhoid fever of so light a character for two or three weeks, as only partially to confine her to the bed. The week before Mrs. L.'s confinement, she became convalescent ; but in the beginning of that week, relapsed without any obvious cause, became delirious on the 7th of October, and died the 17th.

The nurse, who was attacked on the night of the 7th, went home the next day quite sick, and died in a week. She was examined, and there was found extensive peritonitis, with effusion of pus at the epigastric region and in the pelvis, without there being any local cause for the disease.

A sister of Mrs. L., mother of the child first mentioned, who had been with her much of the time, became decidedly ill on the 9th. She took medicine, and was so much better as to continue her attendance upon the sick bed until her death. She then went home sick. She was confined to her bed ten days, with a febrile disease, apparently not of a very determinate character, and then slowly recovered. A week after Mrs. L.'s death, the only daughter of the sister, a young lady 22 years of age, was attacked with symptoms which resulted in peritonitis. She died the ninth day. On examination, there were found extensive adhesions of the intestines, and pus in the peritoneal cavity. The daughter had not been in Mrs. L.'s family, except once on the morning of the 6th, and at the funeral. A domestic in the sister's family, who attended upon the daughter, had a severe attack also of peritonitis a few days later, and recovered slowly after repeated bleedings and other active treatment. In both these two cases there was great irritability of the stomach, with vomiting.

A grandmother of the first domestic came into Mrs. L.'s family on the 9th, and took charge of her until the 15th ; when she was attacked with vomiting and diarrhœa, with pain and fever. She was a little better on the 17th, and sent home. She recovered after several days' illness, of the particulars of which Dr. H. had not been able to obtain any information.

Nov. 14, 1840. *Operation for Hydrocephalus—Death, and Examination.*—Dr. H. G. Clark reported the following case.

January 19th, 1839, he was called to see Mrs. H., in labor with her sixth child, of which, in the course of an hour, she was very comfortably delivered, the presentation being perfectly natural, and the head small and round. The child was a female, weighed $5\frac{1}{2}$ pounds, and appeared quite healthy and plump. The fontanelles were more open perhaps than is the case sometimes, but not at all remarkably so. March 4th, he was called

to see the child. He found that it had nursed well till within a few days, but the mother thought that for three or four weeks the head had been growing too fast. It was wasted, so as to weigh less by a pound than at birth. The face was triangular from the emaciation, and increased size of the head. The forehead projecting—the eyes squinting and twitching, and the pupils contracted. There was constant vomiting, and the dejections were particolored and fœtid. The urine was scant. It continued in this state, little relieved by medicine, until the 11th, when it had severe convulsions.

It was now proposed to tap the head. On the 12th the head was measured, and found to be 18 inches in circumference, and 10 inches over the vertex. The bones of the cranium were widely spread, fluctuation was very distinct, and the head transparent when in a strong light. A puncture was made with a lancet between the occipital and parietal bones, a little to the left of the longitudinal sinus. Eight ounces of clear fluid escaped, tinged only with a little blood from the integuments. The child was a little faint, but rallied when the bandage was tightened and some camphor administered. At least four ounces more of fluid were lost on the pillow during the night. The next day the child was comfortable and had a good appetite. From this time it gained in flesh and strength, although the fluid was returning.

April 2d, three weeks having elapsed, the head measuring 17 inches in circumference, and $9\frac{1}{2}$ on the vertex, was again punctured through the coronal suture, on the left side, and 16 ounces of fluid drawn off at intervals during the next 24 hours. The child was very much prostrated, owing perhaps to the cranial bones having increased so much faster than the brain, that adequate pressure could not be made with the bandage. It had slight convulsions also for 10 days, but became comfortable as soon as the fluid had accumulated in a small degree. The urine became free, and the child continued to improve in health and strength.

May 3d, five weeks from the last operation, the head was again tapped at the same place, and 10 ounces of fluid drawn off. Very little prostration followed. The child was comfortable, nursed well, and weighed $12\frac{1}{2}$ pounds. After this the following was the course of the operations.

June 5th.	Coronal suture tapped on left side,	8 oz. drawn off.
July 5th.	“ “ “ right “	8 “ “
July 18th.	“ “ “ “	5 “ “
Sept. 18th.	“ “ “ “	6 “ “
Oct. 18th.	(weight 13 pounds) “	8 “ “

The child now continued without any return of fluid till January, 1840, when it cut its incisor teeth. The fluid then began again to accumulate, and there were some slight spasms, affecting chiefly the eyes.

Feb. 12th. It was tapped in the left coronal suture, 14 oz. drawn off.
 March 16th. " " " " " 11 " "
 April 16th. " " " " " 8 " "

During the summer the water did not again collect. The rigidity of the limbs, particularly the upper extremities, which had existed from the commencement of the disease, continued. From the time that teething commenced the child had emaciated, and fallen off under the ordinary symptoms attending that process. About 10 days before death, acute symptoms of disease in the brain came on—loss of appetite, vomiting, suffusion of the eyes, strabismus, and frequent convulsions, under which it sunk, and died September 5th, 1840.

Autopsy, reported by Dr. C. E. Ware.—The anterior fontanelle was open and much wider than is common at birth. The sutures were united by very firm cartilage, but not by bone. The frontal bone overlapped by about one inch the parietal bones, and the parietal bones overlapped each other. The scalp was exceedingly thin, scarce thicker than paper in some parts. The entrance was made to the brain by cutting open the sutures. On dissecting up the scalp over the anterior fontanelle, the roof of the left ventricle was cut open, which consisted apparently of the membranes of the brain alone, glued together, and a large quantity of pure pus was discharged, several ounces at this time, and afterwards. When the parietal bones were forced apart, the appearance of the contents was that of a mass of reddish and yellowish lymph infiltrated with serum. It was adherent in every part to the cranium, but could be separated with the hand. It was impossible to make any dissection of it, or to distinguish any other than its most general characteristics. Its anatomical characteristics were almost entirely effaced. Over neither of the ventricles was there, so far as could be discovered, the least particle of cerebral substance. The parietes consisted merely of the membranes glued together, and covered with infiltrated lymph, the lymph being much thicker at the sides than over the roof of the ventricles. At some parts the lymph had formed sacs, which were filled with serum. The largest of them would contain half an ounce. On the sides of the hemispheres, towards the base, the cerebral substance began to appear, and at the base there was nearly as great an amount as is natural. It appeared like a homogeneous, semi-transparent gelatinous mass; the grey and white substance scarce to be distinguished. It was so blended with the lymph which surrounded it, that neither the surface nor the convolutions could be made out. In the right ventricle there were signs of recent inflammation. The lining membrane was thickened, at the posterior part to as much as two lines, and very firm, like cartilage. Its surface appeared like the mucous membrane of the large intestine in dysentery, rough, and spotted with extravasated blood. In the posterior part of this ventricle, and in the substance of the brain in other places, there was something which appeared like creta-

céous matter scattered about in small masses or veins, which was rough to the touch, but did not grit under the knife. The septum between the ventricles was very thick and firm, like the other parietes. In the left ventricle the lining membrane presented the same diseased appearance as the right, but in a less degree. Both the ventricles were much larger than is natural, and were filled with pure pus.

The cerebellum retained its texture, but was very much softened and reduced in size.

The pons varolii was so softened down, that it could not distinctly be made out.

The spinal marrow, so far as could be seen at its upper part, was almost diffuent.

The nerves at the base of the brain could none of them be made out, on account of the difficulty of moving this part of the brain without tearing it to pieces. The base of the cranium was filled up with lymph.

Chest.—The chest was pigeon-breasted. The lungs and heart were perfectly healthy, and contained no tubercles.

The abdominal organs were all examined, and exhibited nothing unnatural. The mesenteric glands were not enlarged, indeed they were scarce of a size to be discovered.

Nov. 28, 1842. *Deep-seated Gangrenous Abscess of the right Iliac Fossa.*—Dr. George C. Shattuck, Jr. read the following case.

Miss E., æt. 21, chesnut hair, fair complexion, cellular and muscular systems sufficiently developed. Never robust, health generally not very good, but has never been confined to her bed by illness for more than two or three days at a time. In the month of June, 1842, she complained of pains in the back and right leg, said she did not feel well, without being able to define more particularly her symptoms. The catamenial periods in the previous three or four months had been irregular, the discharge much larger than at former periods. Monday evening, June 20th, without assignable cause, vomiting, diarrhœa, pain in abdomen, continuing for three or four following days, accompanied by febrile symptoms which did not subside as the others disappeared. The patient remained in bed, July 3d; at 2 P. M., a violent rigor lasting a half hour. At 6 P. M. she was lying on the right side, the right thigh flexed, being unable to lie on her back or on the left side. The pulse 132, small—the skin of a burning heat, the countenance flushed. Pain in the right iliac region, extending down the right thigh, not sharp or pungent, increased on motion of the limb, having been noticed for five or six days; at times more and at times less severe. In the right iliac region, and between the umbilicus and the anterior superior spinous process of the ileum, a deeply-seated tumor, to be defined with difficulty, hard, smooth, painful on pressure, not movea-

ble. Resonance of iliac region on percussion. Other parts of abdomen indolent, soft. All motion of the right inferior extremity painful. White coat on tongue, thirst intense, inappetence, no nausea or vomiting, six or seven small stools in last 24 hours after the administration of laxative medicine. Restlessness, two or three hours sleep the night previous, no cough, resonance of chest and respiration not remarkable. The treatment had been, one or two applications of leeches to the right iliac region, followed by hot opiate fomentations, blister.

July 4th, morning, having had an enema containing a drachm of laudanum the evening before, had slept more quietly during the night; pulse 106, skin moist. Through the day she took rice and lime-water, soda-water. Pulse at 7 P. M., 82, skin moist.

July 5th, at 4 A. M., chill and rigor for half an hour, followed by burning heat and sweat, tongue dry, thirst intense. Abdomen softer.

July 8th.—Having slept several hours in the night, she was seized at 5 A. M. with a severe, almost intolerable, pain in the right lumbar and iliac regions. At 9, after having taken a drachm of laudanum in divided doses, decubitus dorsal, complaining that to breathe was so difficult. The abdomen full, very tender on pressure in iliac and lumbar regions, pulse 120, small. The pain subsided, but the tenderness remained. The patient's condition did not vary materially in the following days. (The catamenia appeared at the usual period, and were as at the last periods.) Hot opiate fomentations were made to the seat of the pain, the bowels kept open by laxatives, cool and alkaline drinks.

July 12th.—The abdomen less full, less painful, occasional nausea and vomiting. Pain and tenderness on pressure in lumbar region, and to the right of the spine, extending up to the region of the liver. All motion very difficult. Dulness of lower right chest, with sub-crepitant rale.

July 18th.—Pulse 116, small. Tumor of iliac fossa indistinct, resonance in that region. Sloughs over right trochanter and sacrum.

July 22d.—For the first time since the commencement of her illness, she was able to lie on her left side. Dejections copious, not remarkable in appearance, but of a very fœtid odor. No pain on pressure over right iliac region. Urine of a deep red color, not coagulable on the application of heat, nor when treated by nitric acid.

July 26th.—Burning sensation in lower abdomen, and of right limb. Pulse 140, small. Complains chiefly of pain in the right lumbar region, and to the right of the spine, restlessness, intense thirst. Her strength failed rapidly in the following days.

August 1st.—Sleeplessness, delirium. She died August 11th, having appeared to be moribund for 24 hours.

Autopsy, Aug. 12th.—Emaciation considerable. On opening the abdominal cavity, the diaphragm was seen pushed up on a level with the fourth

rib. It formed the superior wall of a cavity which extended inferiorly to the periosteum of the ileum and to the tendon of the psoas magnus and iliacus internus muscles, the lower two thirds being behind the peritoneum, which had been dissected from its connections, and was lying so transversely from the lower edge of the liver, as at first sight to be mistaken for the diaphragm. This cavity was filled with a black gangrenous fluid, in which was floating a piece of cellular tissue of the size of a large walnut. This fluid had not extended beyond a circumscribed portion of the peritoneal cavity, but on the posterior surface of the colon with which it came in contact, were several small ulcerations which penetrated to the mucous membrane. This was torn at the slightest pressure, but no perforation appeared actually to have occurred during life. The peritoneum of the cavity was stained of a blackish color in spots, in others reddish with flakes of coagulable lymph.

The liver where in contact with this same fluid was compressed, of a slate color in spots. The right kidney presented a similar appearance, but in other respects the two organs did not appear to be diseased. The psoas, iliacus internus, and quadratus lumborum muscles were softened, black, and partially in a gangrenous condition. The uterus and ovaries presented nothing remarkable. The mucous membrane of the alimentary canal, of the usual color and thickness. The cavity of the right pleura much diminished, containing about three ounces of serum. Some œdema of lungs. The heart and pericardium not remarkable.

Abscess of the iliac fossa is not a very infrequent disease. Several monographs on it have been published, and in one of them the results are taken from 73 cases. Still, the above history contains some peculiarities, and is not without interest. The disease commenced insidiously, and without any assignable cause. When the patient first came under observation, the symptoms were sufficiently marked to establish the diagnosis. The period of suppuration was announced by rigors and febrile paroxysms. The tumor was so deep-seated, and there was so much meteorism, that fluctuation was not detected. Œdema of the integuments, which is found at this period in many cases, was not present. It was in the fourth week of the disease that these symptoms manifested themselves. It is well known that suppuration is established more slowly in these cellular inflammations than in those of the other parts of the body. The time assigned for it by Grisolle, is from the 20th to the 24th day. The pus appears to have been confined to its original seat only for four or five days. The symptoms above referred to were noted on the 3d of July. On the 8th, the patient was suddenly seized with severe pain in the right lumbar and hypochondriac regions, and from that time the local symptoms were transferred into these regions from the iliac, and the patient could vary her position and move the right limb without pain. At this time the diagnosis presented some difficulty. And in the books which I have been able to

consult, I find no similar case. The pus has been effused in several cases into the general cavity of the peritoneum. More frequently it has taken its course outside of the cavity. In two thirds of the cases examined by Grisolle, the abscess opened somewhere in the abdominal walls, near the ligament of Fallopius and the superior anterior process of the ileum. In other cases it has discharged itself from an opening in the gluteal region or near the great trochanter. These cases where the opening is made externally, are found by Grisolle not to be more severe or fatal in a larger proportion than those in which the abscess discharges itself into the intestine. Dupuytren, however, had expressed a contrary opinion. M. Berard has reported a remarkable case where he found a large abscess on the left side between the colon and the abdominal walls, extending into the hypogastric region, thence upward to the umbilicus, near which was the opening through the skin. There the peritoneal cavity was not invaded, and in this respect the case comports with the one under consideration, where the partial peritonitis added so much to the sufferings of the patient, as well as contributed to the fatal termination.

CORRECTION.

GENTLEMEN:

On the 254th page of the last number of your Journal, is a case of "Enlarged Prostate," extracted from the "Reports of the Boston Society for Medical Improvement," in which it is stated that the patient "was attended by Dr. Homans, who at first relieved him, but on the third day failed to introduce the catheter. Dr. Hayward was called in, who succeeded in drawing off his water. The day after, however, *he failed*, and Dr. Warren saw him." Dr. Hayward did *not fail* to introduce the catheter, and saw the patient only once, the day on which he introduced the instrument. This error, although doubtless accidental, I have taken the liberty to suggest to you.

With much esteem,

I am very truly, your obed't serv't,

JOHN HOMANS.

Extracts from Foreign and American Journals.

ANATOMY AND PHYSIOLOGY.

The Functions of the Epiglottis in the Acts of Deglutition, Vomiting and Rumination.—M. Longet, already favorably known for experiments on the nervous system, arrives, from a series of experimental and pathological facts, at the following conclusions on the functions of the epiglottis.

1. The epiglottis is necessary to the *integrity* of the deglutition, since even if animals and man can swallow solids when deprived of it, in the case of liquids it is different: the lid, as it were, is indispensable to direct the drops of liquid which after deglutition flow down the inclined plane formed by the base of the tongue and prevent their falling into the space above the glottis.

2. The complete excision of the epiglottis does not appreciably modify the voice.

3. In the second period of the act of deglutition, in vomiting and rumination, the occlusion of the glottis takes place *after the paralysis of all the nerves proper to the larynx*, by the aid of the pharyngeal constrictors; hence it results that the movements of the glottis accompanying deglutition, &c. are combated by other muscular agents than those acting during the production of the vocal and respiratory acts.

4. The ascension anteriorly of the larynx and the displacement posteriorly of the base of the tongue, are conditions essential to the protection of the aerial passages.

5. On the contrary, the occlusion of the glottis is not necessary for the regulating of deglutition, since in animals the separation of its lips by a pair of forceps, or in the human subject its deep ulcerations, do not prevent its normal action: nevertheless the glottis being shut, presents an obstacle to the passage of solids and liquids into the trachea, when by accident they have been introduced into the space above the glottis.

This accidental introduction taking place, the irritation of the mucous membrane, accustomed only to the contact of the air, gives rise to a convulsive and *expulsive* cough: but if the sensibility of the mucous membrane be destroyed by the section of the laryngeal nerves, the animal, not advertised in time, instead of an expiration, draws by an inspiration the foreign body directly into the trachea.

7. In vomiting, the occlusion of the glottis is necessary to prevent the fall of the matter vomited into the trachea.

8. In rumination, the glottis closes, but in addition the aryteno-epiglottidean muscles, strongly developed in the ruminants, appear to act as additional constrictors of the larynx, and prevent the passage into this organ of the cud as it ascends.—*Arch. Gen. de Médecine.*

The Evolution of Light from the Living Human Subject. By Sir HENRY MARSH, Bart., M.D., President of the King and Queen's College of Physicians, Dublin, &c. &c. &c. Pp. 59. W. Curry & Co. Dublin, 1842.—The substance of this brochure was read before the College in Dublin, some four years ago, and an abstract of it published in the proceedings of that body. In the present publication Sir Henry has embodied a great deal of research and communications respecting the subject of animal luminescence, (if we may use such an expression), as well as that from various inorganic substances. By using the term *phosphorescence*, our author does not pledge himself to prove or even suppose an identity between phosphorus and the luminescence in question.

Sir Henry has collected a great many curious examples of this luminous phenomenon. It has been seen playing in lambent corruscations on the masts and yards of ships, or rendering the ocean a sea of liquid fire. Dr. Lynch, of Galway, witnessed a remarkable instance of this phosphorescence, while travelling by night over an extensive peat-bog in Ireland. Cones of intense fire rose in all directions around him, varying from six to thirty feet in diameter, at their base, and rising to thirty feet, more or less, in height. A heavy rain came on, and dispersed these astounding nocturnal fellow-travellers into air—thin air.

The phosphorescence of fishes, when in a state of decomposition, is well known. It ceases when the putrefaction is complete. Equally familiar is the radiation of light from rotten wood, giving rise to strange stories among the young as well as the old inhabitants of rural districts. The luminous exhalations that occasionally rise from burial-grounds, produce still more terror, and have even been pressed into the service of the muse.

“Thy midnight cup is pledged to slaves,
No genial ties enwreath it,
The smiling brow, like light on graves,
Has rank cold hearts beneath it.”

Moore.

Living vegetables, as well as living animals, sometimes exhibit this luminescence. Thus several species of the lichens give to damp cellars and mines a curious and brilliant appearance. But it is in the ocean, especially in tropical climates, that the most magnificent scenes of marine phosphorescence are witnessed. Sometimes the surface of the sea exhibits a diffused sheet of light—but most commonly the waves sparkle with intermitting and often vivid scintillations; while the track, or wake of the ship presents a long and illuminated *VIA LACTEA*, as far as the eye can reach. The smooth and placid waters of the Mediterranean often present these luminescences as the boats cut their way through the deep, or the oars plunge into the glassy surface.

“Flash’d the dipt oar, and sparkling with the stroke,
Around the waves phosphoric brightness broke.”

Byron.

But we must leave the immense mass of facts collected by our author on this subject, in order to come at once to the phenomena that gave rise to Sir Henry's paper originally.

About ten days before the death of a lady, the narrator observed an extraordinary light darting about her face and head, flashing like an aurora borealis. She was in the last stage of consumption, and had had that day an attack of suffocation which lasted for an hour, and left her very nervous. The narrator watched this luminous phenomenon for some time, when it

disappeared. It gave the face an appearance as though it had been painted white and highly glazed. But the light danced about in a very strange manner. Three nights afterwards the narrator sat up again with the young lady, and again observed the luminescence, although there was no candle in the room, nor any moonlight. The patient's sister came into the room and observed it also. It was again seen the night before death took place, but the light was fainter. Her breath had a peculiar smell, which led the observer to think that decomposition was going on.

Sir H. avers that the narrator was a man of clear head, superior observation, and free from superstition. The next instance fell under our author's own observation. A young lady was in the last stage of phthisis, like the other, and had read some account of the phenomenon. She was much interested on the topic, and often conversed with Sir Henry about it. About an hour and a half before her death, her sister and some other friends were "struck by a luminous appearance proceeding from her head in a diagonal direction." She was semi-recumbent and tranquil. "The light was pale as the moon." At first it was thought to be lightning, but this was given over. As the light played around the head of the bed, candles were brought in lest the dying person should observe it. This case is not so satisfactory as the first.

The third instance was in that of a man who died of lingering disease in the South of Ireland. "All the witnesses agree in having seen the light; but many of them came to the conclusion that it was caused by supernatural agency." Dr. Donovan, however, visited the cabin where the man lived for 14 nights, and "on three nights only did he witness anything unusual." Once he perceived a kind of luminous fog—and twice he saw scintillations like the sparkling phosphorescence of the marine infusoria. He seems certain that there was no imposition. The luminescence in question was not seen on the man's person, but over the head of his bed, on a wall composed of clay and mortar. The luminous fogs appeared to pass in streams through the apartment.

We have only space to allude to one more instance, observed by Dr. W. Stokes. There was a poor woman in the Meath Hospital, laboring under enormous cancer of the breast, from all parts of the ulcerated surface of which, a quantity of luminous fluid constantly distilled. The poor woman remarked that the sore was on fire every night. The light was visible to Dr. Stokes at the distance of 20 feet.

For many ingenious speculations and rational explanations of this curious phenomenon, we must refer to the paper itself, which is clearly an emanation from a classical scholar, experienced physician, and enlightened philosopher.—*Med. Chirurg. Review.*

On the Structure of Intestinal Villi in Man and certain of the Mammalia, with some observations on Digestion and the Absorption of Chyle.
By JOHN GOODSIR.—Having fed a dog with oatmeal, milk, and butter, the author examined the intestinal villi three hours afterwards, when the lacteals were turgid with chyle, and the gut full of milky chyme mingled with a bilious-looking fluid. In the white portion of the fluid, which was situated principally towards the mucous membrane, numerous epithelium cells were found; some of which had evidently (from their form) been detached from the surface of the villi, whilst others had been thrown off from the interior of the follicles of Lieberkuhn. The villi were turgid, and des-

titute of epithelium except around their bases. Each villus was covered by a very fine smooth membrane, continuous with what Mr. Bowman terms the basement membrane of the mucous surface, which is reflected into the follicles. The villi were semi-transparent, except at their free or bulbous extremities, where they were white and nearly opaque. The summit of each villus was crowded, beneath the enveloping membrane, with a number of perfectly spherical vesicles, varying in size from 1-1000th to 1-2000th of an inch; the matter in the interior of which had an opalescent milky appearance. At the part where these vesicles approached the granular texture of the substance of the villus, minute granular or oily particles were situated in great numbers. The trunks of two lacteals could be easily traced up the centre of the villus; and as they approached the vesicular mass, they subdivided and looped; but in no instance could they be seen to communicate directly with any of the vesicles.

These vesicles can scarcely be considered in any other light than as cells, whose lives have but a very brief duration, selecting from and appropriating the materials in contact with the surface of the villi into their own substance, and then liberating these, by solution or disruption of the cell-wall, in a situation where they can be absorbed by the lacteals. When the gut contains no more chyme, the development of new vesicles ceases, the lacteals empty themselves, and the villi become flaccid. During this interval of repose, the epithelium is renewed, for the protection of the surface of the villi, and for the secreting function of the follicles of Lieberkuhn. It is considered by Mr. Goodsir that the epithelium-cells have their origin in certain nuclei which he detects scattered through the basement membrane.

There appears to be a strong resemblance between the process of absorption in animals, as thus explained, and that which also takes place in plants through the medium of the spongiole.—*Br. and For. Review, from Edin. New Phil. Journal, July, 1842.*

On the Structure and Use of the Malpighian Bodies of the Kidney, with Observations on the Circulation through that Body. By WILLIAM BOWMAN, F.R.S., Demonstrator of Anatomy in King's College, London.—[The Malpighian bodies have excited much interest amongst anatomists, from the time of their first discovery; but no satisfactory account has yet been given of their structure and vascular connexions. Still less has their true relation with the uriniferous tubes been ascertained; in fact, Muller and Huschke, two of the latest inquirers on the subject, have positively denied the existence of any such relation. The following is the account of Mr. Bowman's researches given in the Proceedings of the Royal Society.]

"The author describes the results of his examination of the structure and connexions of the Malpighian bodies of the kidney in different tribes of vertebrata, and shows that they consist essentially of a small mass of vessels contained within dilated extremities of the convoluted uriniferous tubes. The tubes themselves consist of an outer transparent membrane (termed by the author the *basement membrane*) lined by epithelium. This basement membrane, where it is expanded over the tuft of vessels, constitutes the capsule described by Muller. The epithelium lining the uriniferous tube is altered in its character where the tube is continuous with the capsule, being there more transparent, and furnished with cilia, which, in the frog, may be seen, for many hours after death, in very active motion, directing a current down the tube. Farther within the capsule the epithelium is ex-

cessively delicate, and even in many cases absent. The renal artery, with the exception of a few branches given off to the capsule, surrounding fat and coats of the larger blood-vessels, divides itself into minute twigs, which are, the afferent vessels of the Malpighian tufts. After it has pierced the capsule, the twig dilates, and suddenly divides and subdivides itself into several minute branches, terminating in convoluted capillaries, which are collected in the form of a ball; and from the interior of the ball the solitary efferent vessel emerges, passing out of the capsule by the side of the single afferent vessel. This ball lies loose and bare in the capsule, being attached to it only by its afferent and efferent vessel, and is divided into as many lobes as there are primary subdivisions of the afferent vessel; and every vessel composing it is bare and uncovered, an arrangement of which the economy presents no other example. The efferent vessels, on leaving the Malpighian bodies, enter separately the plexus of capillaries surrounding the uriniferous tubes, and supply that plexus with blood. The blood of the vasa vasorum also probably enters this plexus. The plexus itself lies on the outside of the tubes, on the deep surface of the membrane which furnishes the secretion; and from it the renal vein arises by numerous radicles.

Thus the blood, in its course through the kidney, passes through two distinct systems of capillary vessels; first, through that within the extremities of the uriniferous tubes, and secondly, through that on the exterior of these tubes. The author points out striking differences between these two systems. He also describes collectively, under the name of *Portal System of the Kidney*, all the solitary efferent vessels of the Malpighian bodies, and compares them with the portal system of the liver, both serving to convey blood between two capillary systems. In the latter a trunk is formed merely for the convenience of transport, the two systems it connects being far apart. But a portion even of this has no venous trunk, viz. that furnished by the capillaries of the hepatic artery throughout the liver, which pour themselves either into the terminal branches of the portal vein, or else directly into the portal-hepatic capillary plexus. On the other hand, in the kidney, the efferent vessels of the Malpighian bodies, situated near the medullary cones, having to supply the plexus of the cones, which is at some little distance, are often large, and divide themselves after the manner of an artery. They are portal veins in miniature. In further confirmation of his view of the existence of a true portal system in the kidney of the higher order of animals, where it has hitherto never been suspected, the author describes his observations on the circulation through the kidney of the boa constrictor, an animal which affords a good example of those in which portal blood derived from the hinder part of the body traverses the kidney. He shows that here the Malpighian bodies are supplied, as elsewhere, by the artery, and that their efferent vessels are radicles of the vena portæ within the organ, and join its branches as they are dividing to form the plexus surrounding the tubes; thus corresponding with the hepatic origin of the great vena portæ. In other words, the vena portæ is an appendage to the efferent vessels of the Malpighian bodies, and aids them in supplying blood to the plexus of the tubes. Thus in this variety of the kidney, as in the liver, there is an internal as well as an external origin of the portal system; while in the kidney of the higher animals, this system has only an internal or renal origin, viz. that from the Malpighian bodies.

A detail of the results of injection by the arteries, veins, and ducts, is

then given, and they are shown to accord with the preceding description. Many varieties in the Malpighian bodies in different animals are also pointed out, especially as regards their size.

The author then proceeds to found on his previous observations, and on other grounds, a theory of a double function of the kidney. He conceives that the aqueous portion of the secretion is furnished by the Malpighian bodies, and its characteristic proximate principles by the walls of the tubes. After giving in detail his reasons for entertaining this view, he concludes by referring to the striking analogy between the liver and kidney both in structure and function, and by expressing his belief, first, that diuretic medicines act specially on the Malpighian bodies, and that many substances, especially salts, which when taken into the system have a tendency to pass off by the kidneys with rapidity, in reality escape through the Malpighian bodies; secondly, that certain, morbid products occasionally found in the urine, such as sugar, albumen, and the red particles of the blood, also, in all probability, pass off through this bare system of capillaries."—*Br. and For. Rev., from Proceedings of the Royal Soc. No. lii. Feb. 3, '42.*

Chemical Characters of the Spermatozoa, Molecules of the Semen.—In a paper read at the Zoological Society, July 26, 1842, Mr. Gulliver stated that, in his experiments, the spermatozoa of mammalia were but little, or not at all, affected by nitric, muriatic, acetic, oxalic, tartaric, and citric acids; while the *spiral* spermatozoa of birds were very susceptible of the action of the vegetable acids, although the *cylindrical* spermatozoa of birds were nearly allied to those of mammalia in chemical characters; and that the chemical characters of the spermatozoa of man might probably be turned to account in medical jurisprudence.

The molecules of the semen he thinks may be connected with the perfecting of the semen, as they are to be found in small numbers at all times in that of healthy men, and in great abundance in that of birds and reptiles just before the testicles become ripe, and disappear or become scanty when the spermatozoa are completely formed. The molecules were described as resembling, in form and chemical characters, the minute particles which he has figured (Gerber's Anatomy), in the juice of the supra-renal glands.—*British and For. Med. Review.*

Pathology of the Tissues. By Dr. JOSEPH ENGEL.—1. An osteophysis, or formation of bone on the inner surface of the skull, in the case of pregnant women, is a frequent occurrence in Austria. It has hence been inferred that there is a certain relation between pregnancy and this species of osteous growth; although against the supposition that there is any such necessary connexion militates the fact that in England this growth has never been observed in pregnant women, and that it has been noticed in women who were never pregnant, and also in men.

The first appreciable phenomenon in this peculiar morbid process is the appearance of a gelatinous, yellowish-red exudation on the outer surface of the dura mater, without any apparent actual implication of that membrane. This exudation, examined by the microscope, exhibits cells containing nuclei, which become united by an amorphous, gluey substance, and extend themselves on one or on both sides by fibre-like prolongations. The nucleus of the cell is tolerably large, and is sometimes surrounded by a capsule. The dura mater becomes adherent, in consequence of this exu-

ation, to the corresponding part of the cranial bone; and from this point dates the deposition of earthy salts, which is effected by the same process by which, in cases of fracture, the formation of bone takes place from the deposition of callus. The phenomena are analogous to those which take place in periostitis, in which exudation from the bone amalgamates with phosphate of lime, resulting in osteophysis.

The frequency of this morbid affection and the circumstance of its occurring in advanced life, are additional grounds for regarding it as having no necessary connexion with the pregnant state. Rarely does this disease manifest itself, during life, by any symptoms.

2. *Proneness of articular cartilage to suppuration.* The author illustrates this proposition by the case of a phthisical subject in whom the knee-joint exhibited all the appearances of chronic inflammation. The synovial membrane was connected with the subjacent fat by a glairy, yellow exudation, and was thickened though not injected; the cavity of the capsule was filled with healthy pus, a thin layer of which attached itself to the surface of the capsule; the semilunar cartilages were entire; the crucial ligaments were friable; the cartilaginous extremities of the femur and tibia were very thin, sharp, and their edges easily separable from the subjacent bone, and divisible into three layers. The brittleness of these "pathological cartilages" was remarkable. They were easily pressed, under the microscope, into an homogeneous, granular mass.

3. *The mode of cicatrization of typhus ulcers.* After the ulcerative process is at an end, and the so-called typhus ulcer appears clean, its bottom, situated in the cellular or muscular tissue, appears, when viewed under an oblique light, covered with an exceedingly fine and remarkable cuticle. This begins from the abrupt margin of the usually slate-gray-colored ulcer, and runs towards the centre of the ulcer, but does not entirely reach or cover this point. The membranous expansion which extends over the rest of the ulcer, is partly of a cellular, partly of a fibrous character, separate or mixed. The cells are round or elliptical, and seem to form fibres by mutual approximation of their homologous sides and the subsequent absorption of the walls of the cells where these are in contact with each other. In other cases fibrous bundles are observable, which appear to be prolongations from a single cell. The author's observations do not permit him to say positively whether this last species of fibrous formation is the origin of submucous cellular tissue, the former of the mucous membrane itself.

4. *Morbid deposits on the serous membranes in cases of protracted diarrhœa.* Every anatomist knows that viscid, thin, colorless exudation which appears as a layer on the free surface of the great serous membranes, in cases of exhausting diarrhœa. In children, more especially, this exudation is not a rare occurrence, and in the most of this class of cases is limited to the pulmonary pleura. The false membrane is easily obtained by stripping it off, though seldom in such purity and quantity as to allow an analysis to be made of it. Examined with the microscope, it appears an amorphous, gluey mass, amid which are discernible numerous round cells, one or both of the sides of which are prolonged into threads; the cells seem two or three times larger than blood-corpuscles, and appear filled with many pigmentous nucleoli. In many there was discernible a pale, round granule or nucleus, about the size of a blood-corpuscle; and this nucleus seemed sometimes made up of many granules. The ultimate constitution

of this false membrane is consequently not easily determined.—*Br. and For. Med. Review, from Oest. Med. Wochenschrift, No. iii. Jan. 1842.*

M. Dumas on the Chemistry of Organized Beings.—It appears that MM. Dumas and Boussingault, in France, have been following out nearly the same pursuits in Organic Chemistry, as Professor Liebig has been doing in Germany. It is immaterial to us to whom the priority belongs; the important point for science is, that these gentlemen have arrived at very similar conclusions.

From a recently published memoir of M. Dumas, we shall select a few passages that bear more immediately on the physiology of plants and animals.

“We have,” says he, “considered *plants* as constituting an immense reducing or decomposing apparatus, that is nourished by carbon, hydrogen, and nitrogen—derived from the decomposition of carbonic acid, water, and oxide of ammonium—and *animals* as forming a large consuming apparatus, in which there is constantly going on the combustion of these elements, carbon, hydrogen, and ammonium, to form these very compounds.

We have laid it down as a recognized principle that plants form, or prepare, from mineral substances the organic materials of their composition, that these materials are taken into the bodies of animals, are there subjected to the process of digestion, thus become animalized, and are subsequently again brought back by a vital process to the state of mineral and inorganized matter.

As accessory results of our researches, we may state that some plants absorb a certain portion of nitrogen from the atmosphere, while others do not; that animal heat is owing solely to respiration; that the chemical process of this function (respiration) takes place not in the lungs but in the capillary vessels of the whole body; that digestion effects two important results, viz. the assimilation of azotised matters, and the restitution of combustible matters to the blood.”

M. Dumas then discusses at considerable length the striking effects of ammonia in promoting vegetation; this seems to be the potent agent in most manures. Hence whatever tends to assist the formation of this substance, or to render it more fixed and abiding, is found to increase the valuable properties of manures. The addition of a solution of sulphate of iron, or of weak sulphuric acid, has this effect, and has been found to add greatly to the fertilizing properties of these matters. A sulphate of ammonia is formed, and remains fixed; the salt being not volatile like its alkaline basis.

With respect to the much vexed question, as to the source of animal heat, it seems to be the opinion of M. Dumas, that during each act of respiration a certain portion of oxygen is absorbed directly into the blood, and a certain portion of carbonic acid—already formed and existing in the blood—displaced and evolved. There is no direct union or combustion, so to speak, of hydrogen or carbon with oxygen in the lungs, as imagined by Lavoisier and Laplace: the formation of the carbonic acid seems to be a slow and successive act that is constantly going on in the minute blood-vessels; and the venous blood, when it reaches the right side of the heart, is already charged with it, and ready to give it off when exposed to the air in the cells of the lungs.

It is necessary to keep in mind that the production of animal heat, the

exhalation of carbonic acid into, and the disappearance of oxygen from, the respired air are three separate phenomena—connected, indeed, the one with the other, but not implying that they are of simultaneous occurrence. Or we may express our meaning in different words, thus: the generation of animal heat, the decarbonization, and the subsequent arterialization, of the blood, are three mutually-associated, but not coincident, phenomena. The blood becomes arterialized without any necessary production of heat at the time: and the gradual formation of carbonic acid—an act which is necessarily attended with the evolution of caloric—is going on in every capillary vessel throughout the body.

“Respiration,” says our author, “introduces oxygen into the blood and renders it of a bright red color; carbonic acid is at the same time expelled from it.

L'oxygene absorbé sert à bruler du lactate de soude, et en general des sels de soude. L'acide lactique transforme celui-ci en lactate et degage acide carbonique. Cet acide lactique provient des alimens sucrés ou amylacés.”

* * * * *

“The fatty matters also form salts with the soda of the blood. When they are in excess, they become deposited around the vessels through which they have exuded, and, by being blended with the albuminous fluids in a state of repose, they serve for the production of adipose cellules or vesicles, and the animal becomes fat—in other words, it lays up a supply of combustible matter. When the organized materials of the blood are consumed (brulées) without being replaced, the vital fluid becomes more decidedly alkaline and begins to react upon the adipose vesicles which surround the vessels; the fat and albumen of the cellules is re-dissolved and absorbed by the blood, and the animal becomes emaciated—in other words, it consumes the combustible matter which had been stored up at a former time.”

M. Dumas closes his remarks on this subject by pointing out the difference in the various kinds of food, according to their mode of action on the system and the changes they undergo during digestion and assimilation. He arranges them in three classes:—

1. Aliments of assimilation—viz. fibrine, albumen, and caseum: these are all of a highly azotised nature.

2. Soluble non-azotised aliments of respiration: such as starch, sugar, acid or acidifiable substances, &c., which at once undergo combustion in presence of the soda in the blood; hence the production of heat manifested from the very commencement of their digestion.

3. Aliments of respiration, insoluble and therefore capable of being stored up in the body, viz. various kinds of fatty matter.”—*Annales de Chimie*.

We may here insert a paragraph or two from M. Liebig's lecture on the different kinds of food.

“Another most interesting result of M. Liebig's researches is that vegetable albumen, fibrine and caseine not only have the same properties as the corresponding elements derived from animal matters, but also exhibit their azote and carbon in the same relations to each other. Thus chemical analysis shows us that herbivorous animals find the constituent materials of their blood, their albumen and their fibrine, already prepared in plants; and that the juice of plants, the vegetable albumen, the farina of wheat, and of other *cerealia*, contain the principle of muscular fibre, while lentiles, peas and beans, contain the same azotised substance, that is pre-

sent in milk. They (herbivorous animals) live upon the flesh, blood, and cheese supplied them by plants; while, on the other hand, their flesh and blood serve for food to the carnivorous tribe. There is thus a complete identity between the azotised principles existing in vegetables and those in animal substances. Their chemical properties are alike; for we find vegetable albumen, obtained by boiling the juice of plants, and freed from all fatty and coloring matter by means of ether and alcohol, can scarcely be distinguished from the white of eggs."—*Med. Chir. Review, from Allgemeine Zeitung.*

PATHOLOGY, PRACTICAL MEDICINE AND THERAPEUTICS.

On the Difference between true Typhus and Typhus Abdominalis, and on the latter affection in Children. By PROFESSOR SEIDLITZ, of St. Petersburg.—Great confusion has arisen from the application of the word typhus to diseases essentially distinct and differing from each other, as typhus abdominalis and true typhus—typhus sanguineus.

The difference between the two diseases may be summed up somewhat in the following manner:

Typhus sanguineus is characterized by a short stage of premonitory symptoms; the rapid development and increase of the disease, marked by some striking though temporary symptom, as shivering; pain in the head; vomiting; extraordinary loss of strength. There is violent disturbance of the circulatory system; the blood is black, altered in character; and a great tendency exists to congestion of the brain, liver, and intestines, constituting hypostatic inflammations or apoplexies of those organs. The skin becomes burning hot, and an eruption of an erysipelatous character appears in large patches over the whole body. The urine is in moderate quantity, turbid, and loaded with crystalline deposits. The disease is contagious; it observes in its course a distinct septemeral type; and critical evacuations precede its termination.

Typhus abdominalis is characterized by long previous indisposition, gradual development and slow progress of the disease, with especial disturbance of the digestive powers. Excitement of the circulatory system does not come on till afterwards; and the blood, which is almost normal in character, does not become concentrated about the parenchymatous organs, but a tendency exists to serous effusion. Cerebral affections occur at a later period, and are evidently secondary. There is no disagreeable heat of skin, but rather a diminution of temperature; petechiæ are scattered about the lower part of the abdomen; and miliary eruptions appear towards the end of the disease. The urine is straw-colored, and, at the end of the attack, deposits a sediment which resembles spiders' web. The disease is not contagious. Its course is very uncertain: it exceeds four weeks, and sometimes continues for six months. Sleep and a constipated state of the bowels announce its termination.

At different ages the symptoms of abdominal typhus vary considerably. One form which has usually not been referred to this head, is that nervous

fever which occurs in children between their sixth and their eighth year. Its precursory symptoms, which consist in irregular appetite, a variable state of the bowels, occasional attacks of fever, marked emaciation, dryness and harshness of the skin, unquiet sleep, and pectishness in the child's manner, often continue for several weeks and then disappear completely during the heats of summer, or, if they made their appearance in autumn, on the cold of winter setting in. Sometimes with the return of spring or autumn these symptoms recur, though less severely; and each year they reappear with diminished severity, till at last they cease entirely. At other times, however, under the influence of errors in diet or of moral causes—as the wearisomeness of a child's tasks at a boarding-school—the appetite is entirely lost, the evacuations become liquid, the skin grows drier, the pulse more hurried, and eventually the disease appears in its severer form. The febrile character of the affection becomes more marked, the skin of the body and the head are burning hot, the thirst is urgent, and slight delirium comes on. The patients now remain in bed without expressing any desire to get up, and soon they begin to pass their evacuations involuntarily. The dejections are liquid, of a yellowish brown color, and offensive smell. The abdomen is tympanitic, slightly painful; the skin of the abdomen and of the whole body, with the exception of the feet, is hot; the lips and tongue are dry, but nevertheless the patients do not ask for drink, though they swallow anything that is given them. They lie for hours together in the same position, altogether unconscious, and, to all appearance, in a deep sleep. After three, four, or five days, consciousness seems to return, but the little patients seem unable to utter a word or even to protrude their tongue; they lie with their eyes closed, but sleepless; their senses being either weakened or else preternaturally acute. At the end of ten or twelve days there is some slight return of appetite; the tongue, which at no time is thickly coated, becomes moister, and the skin of the lips peels off; but before the end of the third week, no critical evacuation takes place, no deposit is thrown down from the urine, no moisture breaks out on the skin. About the beginning of the fourth week, however, perspiration appears about the neck, chest and abdomen; but after two or three days it ceases and leaves the skin harsher than ever. But now frequent crops of miliary vesicles show themselves, after some hours of restlessness and febrile disturbance; but in the intervals of these attacks the sleep is sound and tranquil. The tongue becomes perfectly clean, very red, broad, and flabby; the thirst ceases, but the patients are troubled by hunger, so importunate that they ask for food every half hour. In about the fifth or sixth week the skin once more becomes perspirable, desquamation of the epidermis takes place, and the hair falls off. The children, though worn to skeletons, may now be regarded as convalescent, but they are still unable to walk; and three, four, or even six months are requisite for their perfect cure, while they are very liable to relapse, from errors in diet, or from neglect of the condition of the bowels.

The treatment adopted by Professor Seidlitz is the following: At the commencement of the disease, when premonitory symptoms only exist, he gives very small doses of hydrochloric acid, with ether, or Hoffman's anodyne, or else a mixture of *eau de chlore*, in some aromatic infusion. He orders warm baths twice a week, directs the body to be well rubbed with castor oil every day, insists on a very abstemious diet, and gives the patient pure water for drink. The slight diarrhœa which may exist is not

to be suppressed, but small doses of castor oil may be given, under the use of which the evacuations gradually become more consistent. If in the course of the disease the evacuations become flocculent and more frequent, an emulsion of olive or poppy oil may be given, and sinapisms may be applied to the hypogastric region or to the feet. If the abdomen become hot and tympanitic, half a drachm of strong mercurial ointment may be rubbed into the hypogastric region twice a day, until the symptoms decline, when recourse may again be had to the acid or chlorine; or, afterwards, to an infusion of the flowers of the *salmiac ferrugineux*. The occurrence of delirium must be met by the application of one or two leeches to the mastoid process, so as to keep up a slight draining of blood for twelve or eighteen hours, and ice must be almost constantly applied to the head till consciousness returns. At the same time, half grain or grain doses of calomel must be given till they produce green evacuations, when that remedy must be suspended, and the acetate of lead, in quarter-grain doses, may be given three or four times a day, either alone or in combination with musk, in rather large doses, so long as the tympany and liquid stools continue; and, during the same time, mercurial inunctions may be employed every two hours. A small blister may now be applied to the epigastrium, and should, after an hour and a half or two hours, be removed to another part, so as to produce a slight counter-irritation of the skin of the abdomen. After ten or twelve days more the acetate of lead may be discontinued, a camphorated julep may be given instead, and a little Dover's powder may be administered, and a warm bath employed by way of preparing the skin for the future crisis. As soon as the miliary eruption appears all medicine may be discontinued, in the great majority of cases; but the convalescence, usually tardy, is always expedited by removal to a purer air, or by mere change of dwelling.—*Abstracted from Prof. Seidlitz's Clinique Médicale.*

On the Treatment of Hemorrhagic Diathesis.—In almost all cases the blood which escapes from the incised or lacerated surface is preternaturally fluid. A deficiency of fibrin certainly exists, and this deficiency continues to augment in proportion as the bleeding continues. The number of the blood-corpuscles seems also to diminish. The coagulable power of that fluid is seriously impaired, and if a clot at all forms at the orifices of the torn or incised capillaries, it is loose, spongy, and easily detached; while a fresh clot is formed with more and more difficulty, if at all. Increased density of coagulum (which is what we want) is well known to depend on increase of the proportion of fibrin in the coagulating blood, as occurs in the inflammatory diathesis. But the proportion of fibrin is not to be here estimated in regard to the general mass of the blood merely, but rather in regard to the blood-globules; it being only when excessive in proportion to these, that the tendency to, and power of coagulation becomes most marked. Mere loss of blood produces a deficiency both of fibrin and globules, but not in an equal ratio. At first the latter are chiefly removed, and, consequently, at an early period of the case, loss of blood favors natural hæmoptysis, by increasing the proportion of fibrin to globules, and thereby augmenting the tendency to, and power of coagulation.

But the blood is not alone to blame. The capillaries and arterial tubes are deficient in contractility. In treating the disease, therefore, we must (as in the scrofulous diathesis, to which the hemorrhage bears a considerable resemblance,) prescribe a diet nutritious without being stimulating.

Although the rapidity of many cases of hemorrhage preclude the possibility of any material benefit being derived from dietetic means, yet, seeing these are rationally indicated, it behoves us to avail ourselves of them.

The other means recommended by the author are acetate of lead and opium, given in heroic doses, and, if these disagree with the patient, sulphate of alum and potass, in doses of 15 or 20 grs.—nauseating remedies—and the sulphate of soda, which last he considers useful, by procuring serous discharges from the bowels, and thereby disposing the blood to “solid coagulation.”

In regard to the relaxed condition of the capillaries, the author is of opinion that the acetate of lead will help to remove that state, while opium will calm the heart's action and the general circulation.

He is quite opposed to the actual cautery; and, as respects local treatment, would mainly rely on *pressure*, the bleeding part being first lightly touched with nitrate of silver. And, as “last, not least,” in his list of remedies, he recommends *transfusion*, on the plain ground of the possibility of replacing, by this means, blood “lamentably deficient in both globules and fibrin,” with blood sufficiently abounding in both.—JAMES MILLER, Esq., Edinburgh; *Lon. and Ed. Journ. of Med. Science*, July, 1842.

Ulcer on the Thorax communicating with the Right Lung.—The patient was a woman of thirty-one years of age, of scrofulous diathesis. During winter, when confined with a disease of the hip-joint, she had had occasional paroxysms of cough, with slight hæmoptysis; but in March she had regained flesh and strength, when, unfortunately, she caught fresh cold and had a return of cough, with profuse expectoration and perspiration. In May a scrofulous ulcer, which she had previously been troubled with, broke out on the right side of the thorax, and, assuming a phagedenic character, laid bare a portion of the fourth and fifth ribs. On the 25th of May the author's attention was directed by the patient to a curious noise proceeding from the ulcer, and which, on examination, proved to proceed from the expulsion and entrance of air in respiration; showing that a communication existed with the lungs. On the morning of the 24th of the following month she was found lying in her bed with such a profuse hemorrhage from the ulcer, that the person who saw it described it as “pumping out” each time that the patient breathed or attempted to speak. She died in ten minutes after. No examination of the body was allowed.—J. S. ALLEN, Esq., of the St. Marylebone Infirmary; *Lancet*, July 30, 1842.

Interesting Case of Syphilis.—Mrs. B., a married woman and a mother, had an unhealthy-looking ulcer on the nipple, which, at one time was indolent, at another extended itself, and threatened to “excise” the nipple. An eruption subsequently appeared on the other breast, and on the scapula, along with a large ulcer on each tonsil. The eruption consisted of many roundish spots, of the size of sixpences, of a dusky copper color, constituting, as plainly as possible, that form of lepra described by Bateman as arising from venereal poison.

Some weeks before, a young woman had given birth to an illegitimate child, in the house of a mutual friend, Mrs. A. The woman either would not or could not suckle her infant, and Mrs. B. having at the time a child of her own at the breast, volunteered to give milk to the woman's infant, if brought to her house at particular hours. The child, a miserable creature,

soon died ; and it was after this that Mrs. B., as above described, presented signs of venereal infection. But Mrs. A., who, though married, had never borne children, and could, consequently, never have suckled the servant-woman's child, presented an ulcer of the nipple also, along with an eruption, differing, however, from that of Mrs. B., (which was decidedly leprous), in being papular and covering the whole body.

On inquiry, it appeared that the infant of the woman had been covered with sores about the genitals and at every point. Yet the mother seems to have been healthy. It appeared also that the child, when sleeping with Mrs. A., had been used to apply its lips to her nipple.

Subsequently to the affection of Mrs. B., her own infant had a leprous eruption on the posterior parts, exactly similar to that of the mother. The author concludes : 1. That a diseased infant may be borne by a mother *apparently* healthy : which must be admitted to be extremely possible. 2. That such an infant may, by sucking, communicate the disease to sound persons. 3. That the disease so communicated, may be followed by secondary symptoms. 4. That the disease may be different in such persons. That the disease imbibed may be communicated by suckling.—GEORGE LOWDELL, ESQ., Lewes. *Med. Gazette*, June, 1842.

Remedy for the short-jointed Tape-worm.—Dr. S. recommends the following formula : R. *Cort. radices punice granati* 3 ij., *aquæ* lb. ij., *macerata per horas* xxiv., *decocque ad* lb. j., *adde syrupi zingiberis* oz. i. Two ounces of this to be taken every half hour until the worm is expelled. If the head become dizzy, which is not infrequent, after the fourth or fifth dose, it should be discontinued. It is quite necessary that the above should be made of the bark of the root, and not of the rind of the fruit : this latter appears to be totally inert as a vermifuge.—*Med. Chir. Review*, from Dr. Streeten.

On the Use of Inspissated Ox-Gall.—In the Medical Times of May 14th, 21st and 28th, is an interesting communication from Dr. Clay of Manchester, on the use of inspissated ox-gall. He says :

“I have had my attention for some time directed to this somewhat novel article of the materia medica, with a view to ascertain its powers as a medicinal agent, to what cases it appeared most applicable, and the best method of administering it. Gall of animals is by no means a new remedy, for I find its use spoken of by Boerhaave, and since his time by various writers ; full justice, however, has not been done to its merits, it only having been tried in isolated cases, no one taking the trouble to test its powers by frequent experiments either on the same or different diseases. Boerhaave relates, ‘that he has cured pale rickety children by pills made of the galls of the eel and the pike ; that the medicine operated powerfully by urine ; and that by its use the belly, before swelled, subsided surprisingly.’ Lewis, in his *Materia Medica*, says, ‘in want of appetite and other complaints proceeding from a deficiency of bile in the first passages, this animal bitter may probably be of more service than those of the vegetable kingdom usually directed in such intentions.’ As an external application, ox-gall, combined with the camphorette spirit of wine, has been often spoken of in rheumatism, sprains and bruises. From experiments made upon gall by Cartheuser, Baglivi, and others, it was found to be very soluble in water, sparingly acted upon by rectified spirits, rendering

oily, unctuous, or resinous substances, miscible with water; *it has the peculiar property of preserving milk from coagulating, or turning sour, or when coagulated immediately dissolves it again*; this last property deserves particular notice, and to which I intend to allude afterwards. So far as experiments have been instituted on the gall of animals, there does not appear to be any great difference in its composition, and as the gall of the ox is much easier to be obtained in large quantities, I have selected it as the object of the following experiments:—Dr. Peacock of Darlington remarked (*Lancet*, vol. i. 1836–7, page 398), that he had observed in a case of scirrhus or cancerous ulcer of the breast, and when the system exhibited an accumulation of bile, the pains accompanying such diseases (cancerous) were very greatly alleviated. In the case from which he drew this inference, during the progress of the disease, the patient was frequently attacked by the symptoms of jaundice, and invariably when the white motions and yellow skin appeared, there was almost entire relief from pain. Although Dr. Peacock exhibited gall in other cases, he does not give any decided opinion upon it, but augurs favorably and wishes its being further tested by others. Having some cases analogous, I determined on giving it a trial in such affections, before I proceeded to its trial in other diseases, towards the cure of which I fancied its powers more applicable.”

In these affections he found it to relieve the pain in a remarkable manner, but the most valuable effects from the use of the ox-gall were observed in obstinate constipation from painter's lead, of which he gives five cases, and in dyspepsia, a well marked instance of which occurred in his own person; the history is as follows :

“I was myself laboring under dyspepsia, almost every kind of food became acid soon after being taken; I had violent headaches, constant pain in the epigastric region, and bowels very much constipated, many times three or four days without a motion; occasional relief, but of a very temporary nature, was obtained by the *pilulæ hydrargyri*. Had been subject to these symptoms, more or less, for seven or eight years, but which have been often very severe during the last three or four years. Purgative medicines always produced great irritation and uneasiness for some time after their exhibition. Under these circumstances I took two four-grain pills of the inspissated ox-gall, not having had any motion for nearly four days; the pills were taken at four o'clock in the afternoon, and at seven, without even the slightest sensation of pain, or the common feelings arising from having taken purgatives, I had a free and copious motion, the excrementitious mass being in a pulpy form, and perfectly free from the indurated character I had been so long accustomed to. I repeated the dose next day with similar results. I experienced not even the slightest feelings of uneasiness; indeed, had I not known the fact, I should not have supposed that I had taken medicine of any kind. The acidity immediately left my stomach, and when under its influence the pains in my head and stomach were removed, and my bowels are now quite regular. From taking occasional doses, of course its effects are not sufficiently tested; but I have experienced more relief, with less unpleasantness, than from any other of the many means I have ever resorted to; in fact, its value in dyspeptic stomachs is incalculable.”

His formula of prescription is as follows :—R. Fel. Bov. Inspiss. ; Ol. Carui. ; Magnes. Carbonatis, q. s. ut fiat massa. M. Divide in pil. xxxvi., capiat ii. ter in die.—*Dublin Journal.*

SURGERY.

On the Mechanism of Spontaneous or Symptomatic Luxations of the Femur. By M. J. PARISE.—The author has in this paper very clearly and fully illustrated the opinion that collections of fluid, serous, synovial, or purulent, in the hip-joint are the ordinary cause of the symptomatic dislocation of the femur. We believe he takes too exclusive a view of the matter, and too much disregards other causes of luxation, as well as those cases in which, though the femur is still in the acetabulum, there are yet the signs of luxation; but of this class of luxations by accumulations of fluid, we have not before read so good an account. We shall therefore extract the newest and most important parts of it.

He overthrows satisfactorily all the objections advanced against E. H. Weber's account of the influence of the atmospheric pressure in maintaining the head of the femur in its place, and then shows the influence of artificial injections of the cavity of the hip-joint in forcing out the head of the femur. His plan was to bore through the thinnest part of the acetabulum obliquely, and then to inject fluid into it; the quantity which the capsule would hold being from forty to forty-five grammes of water. The constant results were: 1st, the femur was carried in the direction of flexion, abduction, and rotation outwards; the flexion being equal to an angle of from 30 deg. to 35 deg. with the plane of the horizon, and the rotation outwards being very slight; 2d, the great trochanter was forced outwards, and separated from the anterior superior spine of the ilium, and from the symphysis pubis, for more than half an inch; and was, at the same time, forced downwards, so that the limb was elongated about half an inch; 3d, the capsule was not distended equally, but was especially enlarged near the trochanters; and lastly, the head of the femur was driven so far out of the acetabulum, that the distance of its summit from the bottom of the cavity (as measured on an injection which solidified on cooling), was upwards of two-thirds of an inch. The round ligament seemed to have but little influence on this displacement.

He relates an interesting case of a child twelve years old, in which it is quite clear that the luxation of the femur, where most of the signs of ordinary disease of the hip-joint had been present, was due to the accumulation of a serous fluid mixed with albuminous flocculi within the hip-joint. The cotyloid cavity and the head of the femur were uninjured, except that the latter was grooved by the pressure which it had experienced against the edge of the acetabulum. He believes that at a later period there would have been in this case the same disease of the bones and cartilages as is commonly seen in dislocations after disease of the hip-joint: [but this is, we think, very improbable; the femur and acetabulum would most probably have undergone only the same changes as after dislocation by external force. There is no proof here that the ordinary changes in diseased hips are, as the author suggests, consecutive to the dislocation.]

He enters upon a very elaborate yet clear account of the mode in which a fluid slowly secreted into the capsule of the hip-joint must act, and how it must produce (as is evident from his experiments already mentioned), first, elongation of the limb, real though but slight, and then the condition in which by the action of the muscles the femur may be drawn upwards and backwards. The peculiar positions of the limb, and the succession of their changes, he refers to three chief conditions: 1st. The dilatation of the capsule, which being inversely proportionate to the powers of resistance of its several parts, must be least in the situation of the accessory ligament on its anterior and inner aspect. This will restrain the movement of the head of the femur, which will therefore, as the capsule is distended, be carried outwards and upwards, while the shaft moves inwards and is flexed. 2d. The action of the pelvi-femoral muscles, of which those that lie next the capsule are like it distended by the accumulating fluid, and when they contract, since they all contract with nearly equal force, can have but little effect; while those which lie at a greater distance from the capsule, the adductors, glutei, &c. must by their contraction exercise an important influence in producing both the flexion and adduction, and, at last, the dislocation upwards and backwards of the limb. 3d. The position which the patient naturally assumes, and which is that best adapted for the avoidance of pressure on the diseased joint. For this purpose he inclines over to the healthy side, and flexes his thigh and turns it inwards, in order that it may rest more easily upon the other. At first, also, the round ligament assists in producing the flexion and adduction; and it resists, at the same time, the passage of the head of the femur upwards and backwards, but at length it gives way, and if the femur is pushed sufficiently outwards from the acetabulum, there is scarcely any thing to prevent the muscles from pulling it upwards.

Lastly, the author explains the changes which he supposes to take place in the head of the femur after its luxation; [but these we think (as we have already said) he overrates, by presuming that a mere collection of fluid in the hip-joint without disease of the bones or cartilages is a common occurrence.]—*Br. and For. Med. Rev. from Archives Générales de Médecine. Mai et Juin, 1842.*

Passage of Air into the Veins. By Dr. ASMUS.—The author was removing a "steatoma" as large as the two fists from the region between the lower jaw and clavicle of a man forty years old, and was very carefully separating its base from the carotid artery with which it was in contact, when he accidentally opened the internal jugular vein, which had been pushed far from its usual place by a lobe of the tumor. No blood flowed; but on the instant he heard air enter the vein with a bubbling sound. He asked the man how he felt, who said "Well;" but in the next moment cried out "Its all up!" and began to be convulsed, first in the face, and then in the whole body. He sunk down, and at the same instant another bubble was heard; but still no blood flowed. Alternate convulsive movements and opisthotonos ensued; the face was deadly pale, the breath short, and death seemed close at hand. Rapid bleeding now took place from the wound, and a stream of black blood was seen to issue from the vein, but as often as the patient was convulsed, air again passed in, and the bubbling was distinctly both seen and heard. A ligature was as quickly as possible put upon the vein above the injured part,

and with this the bubbling ceased ; the tumor was cut off level, and the patient was put to bed.

Syncope, alternating with severe convulsions, still continued ; the pulse was not discernible, the heart seemed only to vibrate, and the respiration was short. Stimulants and a variety of restorative means were employed, and above twelve hours after the operation (in which the loss of blood was altogether moderate), the patient began to revive. His condition continued to improve, and he at length completely recovered. [This appears a well-marked case. At the time of opening the vein the patient had lost less than five ounces of blood, and the passage of air into the vein was distinctly observed by the eye and ear.]—*Br. and For. Med. Rev. from Medicinische Zeitung.* Jun 8, 1842.

Dr. Byron on Malignant Diseases.—After many detailed cases the author deduces the following conclusions :

1st. Malignant ulcer of the eyelid is, in its earlier stages, up to a period not yet defined, local, and admits of cure by local treatment only.*

2ndly. That it is usually a disease of advanced life, but is not confined to any temperament or condition of life.

3dly. This malady is rarely found combined or co-existent with other affections ; on the contrary, its presence seems to exempt from any such liability. The sympathetic affection of the stomach, bowels and bronchi, already referred to, forms an exception to this rule.

4thly. Lupus, on the contrary, seems, in most instances, to have a constitutional origin, being, as already shown, found to follow from, or co-exist with, other affections, or disordered conditions of the system ; moreover, it is most effectually checked by constitutional, combined with local treatment.

5thly. The difference, though well marked in several instances, between these two affections, is infinitely less apparent than between either of them and cancer.

6thly. The term “malignant” may be fairly questioned as being applicable to the earlier stages of ulcer of the eyelids ; but it is absurd and inappropriate in the great majority, at least, of cases of lupus.†—*Dublin Journal,* Sept. 1842.

Case of Radical Cure of Hernia. By P. BENNETT LUCAS, Esq.—Some years since I was introduced to a medical gentleman, who arrived in this country from America, furnished with numerous testimonials from Professor Pattison and others, in support of his pretensions to cure hernia by the application of trusses. I witnessed some cases in which he certainly succeeded, and others received no benefit from the means which he employed. I was, however, so fully satisfied of the utility of his plan of proceeding, and that it was founded upon correct views of the animal economy, that I

* The healing of the ulcers was so rapid in those cases where constitutional treatment was used, that no part of the cure could be attributed to it.

† Contrasting those affections with cancer, there is scarcely a point of resemblance between them ; where, for instance, are the two never-failing symptoms of Paul of Ægina, “*ægros maxime, fatigans et perpetuo fere dolore affligens* ?” Where is the contamination of the glandular system years after those affections have remained in a state of widely extended ulceration ? And where are the examples of open cancer being cured by treatment such as was successful in the cases here recorded ?

did not hesitate to apply a similar method of treatment to two cases of oblique inguinal hernia.

The subjects of both these cases were young men, one aged twenty-six years, the other thirty years. In the elder of the two the treatment failed, but was productive of no bad consequences. The case of the younger forms the subject of this paper.

Mr. A. B., aged twenty-six years, was vaulting into his saddle, when he felt a slight and sudden pain in his right groin, which extended down the outer side of his leg, and was accompanied with the sensation of something having given way. These feelings subsided in a few minutes, and he continued his ride as usual. On his return home he observed a small tumor in his groin, which he considered of so little moment that he continued his daily avocations for a month, and these were the contrary of inactive, before he applied to me.

When he was made acquainted with the nature of his disorder, he suffered great mental anxiety; from the apparent hopelessness of his ever being cured; and being a young man of some property, and an attractive person, and unmarried, he felt the necessity of wearing a truss, with as uneasy a mind as he did the danger which hourly attended his not doing so. At this time the tumor, which was a well marked, oblique, inguinal hernia, protruded at the external or anterior abdominal aperture for more than an inch, and was reduced with the utmost facility. It was an enterocele.

A truss of ordinary construction was applied in the usual manner, and at the end of a year the hernia was still present, protruding as usual when the truss was removed, and when the patient made any respiratory effort.

In this condition of affairs, it was proposed to endeavor to effect, by pressure, a consolidation of the tissues in the immediate vicinity of the posterior inguinal aperture, and thus to prevent a barrier to the protrusion of intestine. To the accomplishing of this end a truss was applied, which presented these peculiarities:—Its spring was powerfully strong, and its pad, or rather what corresponded to this piece of the ordinary instrument, was made of box-wood, and was conical, but blunted at its apex. The hernia was reduced; a silk handkerchief, folded three or four turns, was applied over the posterior abdominal aperture, and, with the handkerchief intervening, the truss was applied, its wedge being accurately fitted to the opening.

The curve of the truss did not consist of a single solid arc of steel, but of several plates of this metal, so that the amount of pressure could be regulated according to the feelings of the patient, by the removal of one or more of these springs.

This instrument the patient wore day and night for two months. At first he experienced some inconvenience from the firm pressure against the abdominal wall, and two of the steel curves were removed; after wearing the instrument in this degree of force for a few days, the removed arcs of steel were replaced, and at the end of six weeks the hernia ceased to descend.

A truss of ordinary construction, exerting little pressure, but rather support, and with a soft, flattened pad, was worn by the patient for some months. I hear occasionally from him; he tells me that he has left off his truss for more than a year, is married, and remains free from the disease.

—*Dublin Journal.*

Malgaigne's Statistical Review of Luxations, taken from the registry of the Hotel Dieu Hospital, where the number of dislocations admitted during sixteen years amounted to 530.

1. Comparative frequency of luxations in the different months. From December to March, 204; from April to July, 150; from August to November, 176. (The cases of fracture were in the same proportion.)

2. Comparative frequency in the different ages:—

From 2 to 5 years,	1 disloc.	From 45 to 50 years,	51 disloc.
" 5 to 10 "	4 "	" 50 to 55 "	52 "
" 10 to 15 "	8 "	" 55 to 60 "	51 "
" 15 to 20 "	29 "	" 60 to 65 "	51 "
" 20 to 25 "	32 "	" 65 to 70 "	42 "
" 25 to 30 "	40 "	" 70 to 75 "	19 "
" 30 to 35 "	48 "	" 75 to 80 "	13 "
" 35 to 40 "	38 "	" 80 to 90 "	4 "
" 40 to 45 "	45 "	" 90 "	1 "

3. Frequency of luxations in the different ages during summer and winter. From 2 years to 25 years, most cases occurred in summer; from 25 to 45, most in winter; from 45 to 55, one third more than in summer; from 55, about one half more.

4. Frequency of cases in the different sexes: 395 males, 135 females.

5. Frequency of cases in different ages in both sexes. In children and advanced age numbers were equal.

6. Frequency of cases in the right and left side (where the side was known): fifty times in the right, and thirty-nine in the left side.

7. Frequency of cases in the joints, in 491 cases, as follows:—

Humerus, 321	Clavicle, 33	Ulna, 26	Radius, 4
Carpus, 13	Thumb, 17	Fingers, 7	Femur, 34
Patella, 2	Foot, 20	Inferior maxilla, 7	Vertebræ, 1
Knee, 6			

8. Influence of age in each particular luxation. The frequency of luxations of the shoulder was, in proportion from 2 to 15 years, as 1 to 4; from 60 years, as 1 to 1½. Luxations of the clavicle were almost all confined to adults; those of the ulna were confined to the young; half the cases were from 10 to 20½ years; from 54 upwards, not one case. Out of sixty-seven luxations of the thumb, twelve occurred in winter, five in summer; sixteen in males, and one in female; from 30 to 40 years they are most frequent. Of thirty-four luxations of the femur, eighteen occurred in the winter, sixteen in summer; twenty-six in men, eight in females; they were most frequent in adult age.—*Gaz. Med. de Paris.*

Deafness cured by the Endermic Use of Morphia.—As there is no set of complaints which medical men are so puzzled to know how to relieve as those connected with hearing, we are always ready to receive a hint that may prove useful in some cases, provided it comes from a respectable man who is not an advertising aurist. The name alone of Dr. Hoebeke, the narrator of the following case, is a sufficient guarantee for its truthfulness.

A lady had become so deaf after an attack of fever, that she could not distinguish a word, unless it was bawled into her ear by applying the mouth close to it. But along with the deafness there was always an incessant noise in the ears—at one time like the hissing of boiling water, at

other times like the roaring of a hundred voices together—which was often so distressing as to cause headache and confusion of ideas. These feelings were always worse when the head was on the pillow. There was a quantity of wax in the ears; but no relief was obtained when it was removed. Nothing irregular could be perceived either in the ears themselves or in the throat. Leeches were applied behind the ears, and emetics and purgatives given; but no relief followed. Supposing that the symptoms might be dependent upon some anomalous state of the nervous apparatus, a blister was applied behind each ear, and the excoriated surface was sprinkled with half a grain of sulphate of morphia. By the next day the noise and deafness on the left side had quite ceased, and on the right had much abated. The headache, too, had disappeared.

As the unpleasant feelings still continued on the right side, a second blister was applied and treated in the same manner as before with morphia. The success was decided, and the patient was quite freed of all her annoyances.—*Archives de Med. Belge.*

Remarks.—The medical man often meets with cases very similar to the preceding, and, in not a few, every thing they try is unhappily without avail. How far the remedy proposed by M. Boeke will answer in many of these, we must leave to the experience of our readers to decide.

We may state that we have occasionally in such cases used with advantage a belladonna plaster, applied either to the temple, or behind the ear of the affected side. Many of the complaints of hearing seem to be exceedingly influenced not only by the state of the general health, and especially by that of the stomach, but also by the quietude or irritability of the temper, as well as by the varying conditions of the atmosphere. No wonder, then, that we are so often foiled in relieving them.—*Med. Chir. Review.*

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

On the Management of Cases of Prolapsus of the Funis. By Professor OSIANDER, of GOTTINGEN.—After a brief historical sketch of the various plans which have been adopted for the management of this accident, Professor Osiander relates several cases in illustration of the method of treatment to which he gives the preference. He sums up with the following rules, in estimating which, however, the partiality of the Professor for the long forceps must not be forgotten. He observes that the possession of a pair of forceps at least sixteen inches long is indispensable to the successful practice of midwifery. Professor Osiander's conclusions are:

1. Manual intervention is not required in every case of prolapse of the funis beyond the os uteri. It very frequently happens that the head passes beyond the funis, and that labor is terminated without any accident, though the case is left entirely to nature.

2. When the conditions are favorable, that is to say when the child is of moderate size, when the structure of the parts is natural, and the pains are effective, it is best to leave the case entirely to nature. Moderate pressure on the cord is seldom dangerous in these cases any more than when the funis is twisted round the child. At the most, if the process of labor is slow it may be proper to apply the forceps.

3. Turning should not be resorted to unless some other circumstance

than the prolapse of the cord renders it necessary. The old axiom that in all cases of funis presentation the child is to be turned, is as ill founded as it is mischievous.

4. Cessation of pulsation in the cord is not a certain sign of the death of the fœtus, and is rather an indication for hastening delivery than a reason for neglecting the condition of the child.

5. Attempts to replace the prolapsed funis within the uterus are seldom indicated; but on the contrary are almost always fruitless, while they are likely to interrupt and arrest the process of labor. If, however, the funis is low down in the vagina, or has descended out of it, it must be replaced, and retained within it by a sponge, a compress, or other means, since the action of the cold air interrupts the circulation in the cord, and occasions the death of the fœtus.—*Br. and For. Med. Rev. from Neue. Zeitschrift fur Geburtskunde. Band xii. Heft i.*

Experiments on the best Agent to be employed in cauterizing Ulcerations of the Cervix Uteri. By M. LISFRANC.—Two agents have hitherto been employed indifferently for this purpose—the solid nitrate of silver, and a brush dipped in the acid proto-nitrate of mercury, both of which remedies have brought about the cicatrization of the ulcers. M. Lisfranc has recently instituted experiments with a view to ascertain the comparative merits of the two applications. From these experiments it results that cauterization with the acid nitrate of mercury has seldom excited any discharge of blood, while blood frequently flowed in greater or less quantity after the employment of nitrate of silver. From this fact the inference would be that whenever the ulceration is accompanied (as is frequently the case) with a certain degree of engorgement of the body of the uterus, the nitrate of silver must not be used.

This statement of the comparative effects of the two caustics is supported by the results of 72 cauterizations of the cervix uteri, 44 of which were made with the nitrate of silver, in 31 of which there was a discharge of blood afterwards, while that occurrence took place in 3 only out of 28 instances in which the acid nitrate of mercury was employed.—*Bull. Gen. de Therapeutique.*

Pneumonia in Children.—The frequency and fatality of pneumonia in childhood, as contrasted with advanced life, form very interesting subjects of consideration. The following extracts from a report of the registrar-general of deaths, throw an important light upon the subject. The deaths of the metropolitan district are divided into three classes—those under 15 years of age, between 15 and 60, and above 60. One table is a return for each of five weeks in January and February, 1840. Under “pneumonia” the total of these weeks is as follows:—Under 15 years of age, 257; from 15 to 60, 73; above 60, 30. How far this remarkable difference is owing to a less energetic treatment it is not easy to say, but I fear that a false tenderness in treating the disorders of infancy mildly, is partly the cause; and that when practitioners adopt more decided efforts we shall see a great improvement in this respect, for pneumonia, when fatal in infancy, very rarely is found to have advanced beyond the stage of hepatization, whereas the reverse of this is generally observed in adults.—*Dr. J. F. Duncan, Dublin Journal.*

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Original Communications.

ART. 1.—*Phlebitis, or Inflammation of the Veins.* By GEO. B. LORING, M.D.

THIS disease, so formidable in its nature, and so general, was unknown to medical writers until the acuteness of Mr. Hunter brought it forth, and by ingenious experiments proved its existence, and its effects upon the constitution. In a paper published in 1793, in the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," he opens the way into this new branch of medical science. Having observed, in violent cellular inflammation from any cause, that the veins take on an inflamed state also, and become suppurated, adhered, or ulcerated; that they form, unless obstructed by adhesion, an open passage for pus to the heart, but by their obstruction cause abscesses; and that where the inflammation is strongest in the vein, the pus is purest, becoming mixed with blood and coagulum as the passage approaches or recedes from the heart; he inferred that a great source of evil in amputations, compound fractures, and mortification, might be found in a morbid action of the veins. He found the same appearances in fatal cases after venesection, and attributed the effects met with, to an inflammation of the opened vein, instead of looking to wounded tendons and nerves, as his predecessors had done. Constant observation on subjects, living and dead, convinced him of the truth of his proposition so strongly, that he was disposed to attribute to the large veins the extent or spread of all inflammations beyond the bound of continued sympathy.

The path thus pointed out by this great man, was followed by Abernethy, Clarke, Wilson, and others, who gathered strength for the theory by constant, conclusive experiments. Still little was known of Hunter's researches among French pathologists, until 1815, when Mr. Hodgson published his treatise on diseases of the arteries and veins, a valuable work, followed by those of Travers and Carmichael. These treatises served to bring forward the discoveries of Hunter, and introduce a new system of pathology to all those who had followed the school of Pinel, and obstinately adhered to doctrines, whose chief merit consisted in being opposed to the blind humorism of the ancients. Clear and simple as it is, Cruveilhier found in it the link which unites this theory of old pathologists, with the rational system of the moderns; and to him it presented a truth and power capable of ruling in some manner the entire pathological doctrine of the present day; offering a solution of a crowd of phenomena, which escaped all explanation as well as all theory. With him, it belongs equally to medicine and surgery, being traumatic and spontaneous, according to circumstances, which will be shown hereafter in the causes of phlebitis.

That the effect, general and local, upon the system, of inflammation of the veins should be immense, and powerfully prostrating, cannot be wondered at, when we consider the vast extent of surface occupied by the lining membrane of these organs, greater probably than that of any other shut sac in the body, and when we know that the communication is as direct with the heart, as that of head-waters with the ocean. For investigations show us, that no vein escapes, but in the deep-seated veins of the upper extremities, in the vena cava, splenic, spermatic, renal, and vesical veins, azygos, vena portæ, vena innominata, jugulars, sinuses of the brain, pulmonary veins, and in the veins returning blood from the large bones of the body, inflammation is found, and out of it arise those deep-seated abscesses of the liver, lungs, joints, cellular membrane, which occur so strangely and so uncontrollably after injuries of the head, parturition, amputation, and other great surgical operations. Although thus immediate in its effects, it differs in its degree and operation from the mild, adhesive character, causing merely an obliteration of the canal, to some extent, to the violent, suppurative kind, so diffuse and fatal.

As to its mode of operation in fatal cases, Lee says, "the researches of modern pathologists lead to the conclusion that, in the greater number of cases of phlebitis, death does not result from the

extension of the inflammation of the vein to the heart, the inflammation having been sometimes limited to a few inches only of the vessel. From the resemblance which the symptoms of phlebitis bear to those produced by injecting acrid and poisonous fluids into the veins of animals, and from pus being generally found in the veins of those who have died of phlebitis, the conclusion seems legitimate, that the constitutional symptoms of venous inflammation, generally, though not invariably, depend on the introduction of a fluid into the circulation, which contaminates the blood, and operates as a poison." This doctrine Cruveilhier adopts, and we find it to be his opinion, that unless pus enters the circulation, no matter how extensive the inflammation, those evil results do not follow, which are seen when the impediment formed by the coagula is removed, and we are borne down by atonic, adynamic fever, preceded by intense shivering, and followed by death. When we consider that the veins serve not only to return to the heart the blood which has served for arterial circulation, and has thus become unfit for the purposes of life, but that they constitute a great reservoir, in which all the phenomena of nutrition, secretion and inflammation are carried on, and in which are deposited, with the products of absorption, all the morbid causes which penetrate, or are generated in the economy, we can easily see how a deposition of pus, borne along these channels to every part of the body, should produce the constitutional and local effects witnessed so frequently on all sides.

The inflammation from wounds and venesection is found to extend in both directions, upward towards the heart, and downward towards the extremity of the limb, "contrary to the current of blood circulating in the vessel." And we find, that "not only are the coats of the vein inflamed in some cases of phlebitis, but the cellular membrane, skin, and other contiguous parts, participate in the disease, and suffer from the actual consequences of the inflammation."

Having shown the immense importance of phlebitis to the surgeon and physician, and having seen how it opens upon us in all inflammations—which are indeed resolvable into phlebitis, either venous or capillary—I shall consider,

1. The constitutional and local symptoms of phlebitis.
2. The causes of phlebitis.
3. The kinds of phlebitis, dependent upon the difference of situation.
4. The course, termination, and effects of phlebitis.

1. The symptoms of the disease, wherever it may be found, and under whatever circumstances, whether traumatic or spontaneous, have in all cases a distinct course, from which they swerve very little, and which impress us with the prostrating power of the inflammation. According to Cruveilhier, "the general symptoms are all those which are attributed generally to *purulent absorption*; to wit, extremely grave typhoidal symptoms, to which the diseased succumb with a greater or less degree of rapidity." Arnott gives a case as early as 1806, in which the following train of symptoms is found; the patient had been bled several times, from the 1st to the 15th of November, for epilepsy. On the 16th was bled from the right arm, which became swollen and very painful from the shoulder to below the elbow (having been preceded by some redness and tension about the aperture); face and skin of the body of a yellowish color, pulse feeble and frequent; 19th and 20th, fever more intense, tongue dry and coated, great pain in the arm; 21st and 22d, lies supine, great prostration of strength, heat of skin, tongue dry, pain in the right side of the chest, respiration short; 23d, tension of the arm diminished, some pus flowed from the wound made in bleeding; respiration short. Died at night, seven days after the receipt of the wound in the arm."

Mr. Hodgson speaks of a fatal case, accompanied with great constitutional irritation, and symptoms resembling typhus; and having found the degree of "constitutional irritation which takes place in extensive inflammation of the veins, to be attended with symptoms of greater debility than acute inflammation in general," he accounts for it, by supposing the effect to arise "from the great extent of inflamed surface," and also, as it would seem, more probably, by inferring that "the effect is produced upon the nervous system by the pus, which is secreted into the vessel, being mixed with the blood." In this latter supposition, he approaches nearly the ideas of Cruveilhier, thereby differing from Travers, who sneers at the noxious qualities of pus, contending that the most rapidly destructive inflammation is that which has the true adhesive process, in which no pus is secreted. He attributes the injury to the diffused, disorganizing character of the inflammation, acting upon the great extent of surface occupied by the lining membrane of the veins. Having inquired into the essential points of distinction between veins and arteries, as far as regards their texture and properties, and considered the relative pathology of these vessels, he observes, that "the

contrasted character of inflammation of arteries and veins above-mentioned, explains the active constitutional sympathy peculiar to the latter. This corresponds with our observations of the difference, in this respect, presented by the bounded and undefined inflammations of the joints, the peritoneal or pleural cavities, and other shut sacs of the body." With him, the character of inflammation of the veins is continuous, and the constitutional symptoms correspond to this. The violence of these symptoms appears to him sufficiently explained, not by absorption of pus, nor by the transmission of the inflammation to the heart, nor by the great degree of sympathy existing between the venous system and the constitution, but by the fact, that veins being indisposed to inflammation, except by continuity, have the more effect upon the constitution when they are thus excited. This kind of inflammation he finds also in the absorbents, and the effects upon the constitution to be the same. Now do we not find in this very parallel which he has drawn, a refutation of his theory? Do we not trace to the reception of a morbid poison, the inflammation of the absorbents, and may we not find in pus, also, as a morbid poison, a cause for inflammation of the veins? Each takes its irritating matter into itself, and becomes inflamed in consequence, with corresponding constitutional symptoms.

Recent pathological researches show us a strong resemblance between the symptoms of phlebitis, and those produced by injecting acrid and poisonous fluids into the veins; from which we may safely infer, that pus, as it is generally found in the veins, in fatal cases of their inflammation, acts as a poison, and contaminates the blood. Hence, "*alteration du sang,*" and "*infection du sang,*" of Cruveilhier.

In many cases of crural phlebitis, given by Lee in his treatise, we shall find the trains of symptoms so clearly marked out, that in no way can a better idea be got of the course of the disease than by quoting them. He has found it occurring in puerperal women, as it were, traumatic, and in women who are not in a puerperal state, and men, with whom the attacks were spontaneous. Traumatic or spontaneous, the symptoms are the same.

"A woman, aged forty, who had been delivered of twins a month before, and who had nearly perished from flooding, and subsequently from an attack of uterine inflammation, was seized, on the 27th August, 1829, with a violent fit of cold shivering, followed by pyrexia and pain in the right iliac region and groin. In the course of two

following days, the pain increased in severity, and extended down the inner surface of the thigh towards the ham, and the whole leg and thigh became much swollen. 29th. The whole right inferior extremity affected with a general intumescence, and completely deprived of all power of motion. The temperature of the limb, particularly along the inner surface, much higher than that of the other, but the integuments retain their natural color, and do not pit on pressure. The femoral vein, for several inches under Foupart's ligament, is very distinctly felt enlarged, and is very painful when pressed. Out of the course of the crural veins little uneasiness is produced by pressure. In the right side of the hypogastrium there is also great tenderness; pulse, 120; tongue furred. She appears pale and depressed, and complains of deep-seated, acute pain in the lower part of the back when she attempts to move. From this period until the 22d of September, when she died, she suffered from repeated fits of shivering, which occasionally assumed a regular intermittent form; there was diarrhœa, with brown tongue; the glands in the right groin became enlarged, and the left inferior extremity became affected in a manner similar to the right."

As we are now concerned with symptoms alone, I shall place the appearances found after death, among the terminations, effects and course of phlebitis.

In most cases of crural phlebitis, in puerperal women, there is an attack of uterine inflammation, in the interval between delivery and the commencement of the swelling in the lower extremity; or there are certain symptoms present "which are to be regarded as *characteristic of venous inflammation*, viz., rigors, headache, prostration of strength, a small rapid pulse, occasional paroxysms like those of ague, nausea, loaded tongue, and thirst." The local symptoms are most easily found in these cases, on account of the size of the veins inflamed, and superficial manner in which they lie. We are, therefore, indebted to them for the clearest view of these symptoms. And since in all cases there is a resemblance, so that Dr. Cheyne observes, in his report of the Whitworth hospital, which contains an account of dysentery, that "it is worthy of remark, that a swelling occurred in several patients, both males and females, resembling phlegmasia dolens, in all respects but in its connection with parturition," I will give the course of local symptoms Lee has afforded us in his account of the crural phlebitis of puerperal women.

He says, "the sense of pain, at first experienced in the uterine

region, has afterwards been chiefly felt along the brim of the pelvis, in the direction of the iliac veins, and has been succeeded by swelling and tension of the part. After an interval of one or more days, the painful tumefaction of the iliac and inguinal regions has extended along the course of the crural vessels, under Poupart's ligament, to the upper part of the thigh, and has descended from thence in the direction of the great blood-vessels of the ham." Pressure aggravates the pain; and we can trace the femoral vein, like a cord, rolling under the fingers. The whole limb gradually enlarges; the integuments tense, elastic, hot, and shining, and there is pitting on pressure, or not, according to the acuteness of the attack, and the length of time it has continued. At times there is diffuse erythematous redness. Power of moving the limb is usually lost, and the greatest freedom from pain is felt in a horizontal posture with the leg slightly flexed."

A case of crural phlebitis in a man, will show the analogy between the disease as met with under different circumstances, puerperal or not.

Case recorded by Drs. Graves and Stokes. "A young man of strong habit was employed for two successive days in working in a ditch, and was consequently obliged to stand in water above his knees during that time. On the following day, he became affected with lassitude, vertigo, and general weakness, and complained of severe pain in the right thigh. These symptoms continued for several days, when he was admitted to Meath Hospital. His countenance was anxious and depressed, the tongue furred, thirst, headache, urine scanty, turbid and high colored; pulse ninety-six, skin mottled with petechiæ. In addition to these general symptoms, the respiration was labored and unequal, with some cough; face very livid. But his chief complaint was a severe pain in the upper and anterior part of the right thigh, which was greatly aggravated by motion or pressure. He had also severe pain in the left hypochondrium.

At this time no swelling of the limb whatever could be detected; but in the course of two days the upper portion of the thigh became evidently swollen, the part being extremely tender, but not at all red. The pain of the side continued, and extensive bronchial and pneumonic inflammation was detected. General bleeding, and very free leeching to the limb was employed. The blood was not inflammatory, and no relief was experienced by the patient. The swelling of the thigh increased; calomel and opium were freely ex-

hibited, but without any effect. The typhoid symptoms increased, and the patient died on the fourth day after his admission.

We have thus seen the strong typhoidal type which the symptoms assume in phlebitis; for we have in typhus, according to Stokes, "listlessness and indisposition to exertion, alternate chills and hot flushes, with uneasiness and pain in the pit of the stomach. The symptoms are succeeded by pain in the back and loins, burning heat of the skin, flushing of the face, sense of weight in the head, or giddiness, noise in the ears, and disposition to quietude. The expression of the countenance indicates intellectual dulness. Pulse is frequent and soft," or "struggling and variable; anxious breathing; rough, foul and dry brown tongue; bowels torpid in the beginning, becoming in the advanced stage exceedingly loose; petechiæ appear," according to the severity and stage of the disease. Here we have a number of symptoms, strikingly parallel with those already enumerated, as belonging to phlebitis. Now we know typhus fever has its origin in malaria, which exert a poisonous influence upon the fluids of the body. The petechiæ, and tendency to gangrenous sloughing, with other low general symptoms, are strong evidences of this, and may we not, thus finding an analogy between the two diseases, look to similar causes whence may arise the resemblance? May we not judge from the *symptoms*, then, general and local, that in both cases the blood is poisoned; in fever, by reception from without of miasmata; in phlebitis, by generation of poison within the vessels themselves? Do we not find proof in the symptoms, therefore, that the introduction of pus into the circulation constitutes a prominent point in the course and fatality of the disease, instead of "diffuse inflammation," and the sympathy of the constitution with the peculiar kind of inflammation the veins take on, as Hodgson and Travers would have us believe?

2. *Causes of Phlebitis.*—Any irritating cause acting upon the coats of the veins, as wounds or external violence, may produce phlebitis. In amputation, in phlebotomy, in separation of the placenta from the uterus, in wounds of the head, and in comminuted fractures, we find powerful causes. Cruveilhier says operations on the bones are exceedingly apt to produce it, and he refers the constant symptoms to a miasmatic infection of the whole mass of fluids. The application of a ligature to the vein, and its division for the cure of varix in the lower extremities, cold long applied to a part, chilblains and gangrene, may produce inflammation of these vessels. We have

laid down as a general law by Cruveilhier, that we should “never touch a wound when it is yet under the influence of violent inflammation. Independently of the excessive pain produced thereby, we are liable to transfer to the suppurative those adhesive inflammations, which hold their place, and evidently the veins participate in this transformation, as well as the other tissues.”

Many cases are given, in which ligatures about different veins have caused fatal phlebitis; Mr. Hodgson reports cases; Mr. Oldknow, in the *Edinburgh Medical and Surgical Journal*, gives one where this operation on the saphena vein was fatal; and Mr. Travers, where the femoral vein was affected.

Mr. Hodgson gives a case coming under the observation of Mr. Freer, in which the ligature of a varicose vein was followed by violent pain in the left side of the chest, labored breathing, and a violent vomiting of blood for hours after the operation. On removing the ligature, the symptoms subsided, and in the course of time the vein appeared to be impervious below the part which had been tied, and several varices on the calf of the leg were harder than before the operation. About six weeks after the operation, a large vein, a little above the outer ankle, was tied with a single ligature which was immediately removed; the patient became feverish soon after and vomited twice. During the following day her pulse was natural; on the third day after the operation, the vessel to which the ligature had been applied was found to be impervious; but as other veins in the limb were varicose, and caused great pain and inconvenience, two of the largest of them were tied in a similar manner. The operations were performed nine weeks after the last, which has been described. The ligatures were cut away immediately after their application. In three hours the patient vomited a fluid slightly tinged with blood. On the second day, her pulse was almost imperceptible, and she was attacked with delirium and severe vomiting. On the third day the symptoms had increased; the pulse was scarcely to be felt on the fourth day. On the sixth she was delirious and depressed; after a bleeding from the arm the pulse became fuller, and she began gradually to recover; the incision healed, and obliteration of the vein was produced by a ligature, which was immediately removed.

Lee gives a case, reported to himself by Sir Astley Cooper, “in which he met with a tumor on the saphena major vein. The tumor was laid open or removed, and inflammation of the vein succeeded,

which destroyed life." Sir Astley cut out a varicose enlargement of the vena saphena above the ankle, and a fungoid tumor below the knee, through which the saphena ran, in both which cases great inflammation ensued, high constitutional irritation and death.

In phlebotomy, we often meet with severe phlebitis ensuing in the punctured vein, without any apparent cause. Moving the arm soon after bleeding, a bad state of the lancet as to sharpness, and the instrument being charged with putrid or irritating matter, have been assigned as reasons by Abernethy, Dr. J. Thomson and M. Breschet; but a peculiar irritability of the constitution, and a certain state of atmosphere, inasmuch as phlebitis frequently occurs at particular seasons, have probably a more powerful influence than any other causes, in the production of traumatic and other varieties of phlebitis." M. Dance has published a case of a young physician who died from phlebitis caused by having punctured a small phlegmon with a bistoury, which he had employed in opening an anthrax a month before. Mr. Howship gives in his collection, a specimen of inflamed varicose saphena vein. It is tortuous, and connected with it are several pouches filled with coagulum of blood. The inflammation arose from a gouty state of the foot transferred to the saphena vein, and extended a considerable way up the limb.

The pressure of tumors and other bodies may cause inflammation of the veins,—a fact which enabled Mr. Travers to obliterate a varicose saphena behind the inner condyle of the knee, by means of adhesive straps applied around the limb, with as much firmness as could be borne.

Varicose veins are cured by spontaneous inflammation, in which cases Mr. Hodgson found strings of coagulum deposited, and a subsequent firmness of the vein, rendering it incapable of being emptied even by pressure. Hodgson has seen "four cases, in which this event terminated in spontaneous cure of varices. In these instances it is probable that the coagulum accumulated until it completely filled the varix, or the upper portion of the vein communicating with it; the blood, being unable to pass forward, coagulated in the vessel to a considerable extent. This coagulum was gradually absorbed; as its absorption advanced, the coats of the vein contracted; the vessel was ultimately obliterated, and the blood was conveyed through collateral channels."

* This spontaneous inflammation is not confined to the veins of the extremities, but occurs also in those of the great viscera. Cruveilhier

gives a case in which the cellular sheath of all the branches of the vena portæ was inflamed, the vein itself being sound. Broussais thinks the veins are often inflamed in smallpox, measles, and scarlatina. Ribes refers erysipelas to the extremities of the veins; and Bouillaud finds in phlebitis, the point to which the phenomena of typhus fever are referable. We have a case reported by Lee, in which the extraction of a tooth caused a fatal inflammation of the dental and maxillary veins, extending so far that pus was found in the veins of the brain.

We have for crural phlebitis of women, a fertile cause in the uterus and the several acts it performs. Dr. Davis, in an essay read before the Medical and Chirurgical Society, having proved that phlegmasia dolens is an inflammation of the iliac and femoral veins, has been subjected to the attacks of Mr. Lawrence and others, as to the cause. He refers it to pressure of the gravid uterus, and at no time, until Mr. Guthrie wrote in the Medical and Physical Journal, in 1826, had it been suggested, that perhaps by tracing the inflammation from the common iliac, down to the uterus on the affected side, the origin of the disease might be found to exist in that organ. Even Velpeau has given it as his opinion, that the disease, instead of originating in the veins, arises from inflammation and suppuration of the articulations of the pelvis, and is thence transferred. Lee, in a work on the "Pathology and Treatment of Diseases of Women," offers, as the result of long and thorough investigation, the belief that "if inflammation be excited in the uterine branches of the hypogastric veins, it may continue to spread along these until it reaches the common external iliac and femoral veins, and by the morbid changes induced in them, give rise to all the subsequent symptoms." In the reports of his dissections, we find the branches of the internal iliac called the uterine plexus, highly inflamed, completely plugged up with coagula, and thickened and contracted. He says, "Inflammation of the vein rarely takes place in any part of the body where it cannot be referred to a wound, or some specific cause acting externally on the coats of the vessels. In uterine phlebitis, the inflammation cannot, it is true, be traced in all cases to the semilunar shaped orifices in the lining membrane of the uterus, which communicate with the sinuses, where the placenta has adhered; yet it scarcely admits of a doubt, that the frequent occurrence of the disease arises from the orifices of these veins, in the lining membrane of uterus, being left open after the separation of the placenta, by which a direct communication is estab-

lished between the cavities of the veins and the atmospheric air, in a manner somewhat analogous to what takes place in amputation, and other extensive wounds."

That this theory is worthy of adoption, even were it not supported by the numerous cases brought forward by its author, must be seen when we inquire at what time the inflammation commences in puerperal woman. All who have treated of the disease, "describe it as commencing, in the great majority of cases, subsequent to the tenth day after parturition, with symptoms of uterine irritation, and constitutional disturbance of a low typhoid character, and with pain and swelling in one extremity only." In women who are not in a puerperal state, we find the disease arising also from whatever cause disturbs the uterine functions, such as suppressed menstruation, and malignant ulceration of the os and cervix uteri. We have nothing here like inflammation and suppuration of the articulations of the pelvis, which Velpeau would have us to believe to be the cause of the disease, by an absorption of pus. In crural phlebitis, in men also, what do we find to be the causes? External injuries, exposure to cold and moisture, and ulcers, amputation, and tumors pressing upon the vena cava and iliac veins. In all cases, something acting upon the coats of the large veins; whence we should infer that the affections of the pelvic articulations were caused by the inflammatory action of the veins, when the two lesions exist together, rather than a reversed order of things.

We have very many other causes of what is called phlegmasia dolens in men, besides those already mentioned. Lee has a specimen of inflamed external iliac and femoral veins obtained for him by Dr. Forbes, who received it from Dr. Macann, where the disease was subsequent to dysentery, and by its supervention on this disease caused death. Drs. Graves and Stokes have seen it occurring after fever; and in this disease, as well as in dysentery, Dr. Lee thinks the hemorrhoidal veins are the first affected.

Cruveilhier records a case in which a sound was introduced into the bladder for retention of urine, caused by an enlarged prostate. Pain soon came on in one of the lower extremities, and the veins became painful and distended like hard cords. After death, all the various degrees of inflammation were discovered in the veins of the limb. Cruveilhier judges that, without doubt, inflammation of the prostatic and vesical veins had been induced by the introduction of the instrument.

A slight blow on the shin, over a branch of the saphena, has been followed by swelling and inflammation all over the whole limb, and pain in the direction of the upper third of the saphena, before it dips to unite with the femoral vein. After a long time, the symptoms having subsided, the saphena and femoral veins had evidently become impervious from the inflammation.

In assigning all these causes, it must be seen how completely they lie bare upon the surface, giving us no view, even the most indistinct, into the depth of the truth. We see that from phlebotomy, amputations, uterine diseases, visceral lesions, ligatures, blows, and even the slightest accidents, and unusual exposure, the disease may arise; and we have foul lancets, and little extraordinary motions referred to, as sober causes of a grave complaint. But how many thousands are bled with bad instruments, how often have we seen a rusty phlegm driven into the great plexus of veins in the breast of a horse (for Mr. Hunter has seen phlebitis in them from this cause), how many amputations, deliveries, and kicks upon the shins do we meet with, how often have we stood day after day knee-deep in mud and water, without knowing a symptom of phlebitis! Underneath all these superficial causes must lie the great cause, which must be to us contained in that general *corps du reserve*—constitutional predisposition. As by long labors in the dissecting room, we bring our bodies to such a state; that wounds which otherwise would have been received with impunity become exceedingly dangerous, so may, one would think, the slightest accident, coming at the proper time, give rise to phlebitis,—an accident which, under other circumstances, would scarcely have been recognized by the system.

3. *The kinds of Phlebitis, dependent upon difference of situation.*—This division must necessarily be extensive, inasmuch as every part of the body is subject to inflammations, which may be called phlebitis. By a too refined delicacy, every vein might have its peculiar phlebitis, or at any rate its individuality in the disease, as far as a name is concerned. For inflammation itself is capillary phlebitis; as Cruveilhier says, “in all inflammations, the venous radicles are specially affected.” But I have founded distinctions on this ground, as the most convenient form of presenting the most important modes in which the disease appears,—having first drawn the general division into traumatic and spontaneous, before referred to. The terminations, &c. of each come in another division.

Uterine phlebitis is one of the most formidable forms of *puerperal fever* (Cruveilhier); a woman, who has just been delivered, being properly compared to a person who has met with a severe accident, or undergone a surgical operation. Its symptoms and causes have already been regarded.

Phlebitis of the sinuses of the dura mater may be primitive, and in a manner spontaneous, or consecutive to the introduction of an irritating body into the circulation. It has been treated of by Ribes and Hooper, and still more recently by Cruveilhier. According to the latter writer, it presents the anatomical characters of phlebitis of other parts of the body; in the first period, coagulation of the blood; in the second, suppuration in the centre of the clot; in the third, pus filling the sinus. We have, of course, complete apoplectic symptoms—and find œdema as in other parts of the body when the veins are obstructed, and foci of blood, true apoplectic centres (foyers), occur in the substance of the brain and cellular tissue. We find different pathological conditions depending on the difference of attack, the extent of the lesion, and still oftener on the rapidity of the obliteration of the sinus.

“If inflammation of the sinuses of the *dura mater* leaves little to desire, in the point of view of pathological anatomy (which will be referred to in Termination, &c. of *Phlebitis*), it is not so in a diagnostic and therapeutic point of view. The analysis of symptoms observed in the different individuals, who have presented phlebitis of the sinuses, conducts to nothing positive. Somnolence, profound coma of some, convulsive movements of others, the air of stupor, the excessive headache in some cases, betray without doubt a suffering of the head; but is this suffering idiopathic? is it sympathetic or symptomatic? New facts will perhaps allow us to discover, in the midst of this crowd of cerebral phenomena, causes, without which the solution of this problem is impossible. Until then, therapeutics will be reduced to the general means of relieving cerebral congestion.” (Cruveilhier.)

Phlebitis of the pulmonary artery occurs in the form of lobular pneumonia, and seems rather to be the result of phlebitis in some other organ, than spontaneous and idiopathic. Cruveilhier has related a case, in which it arose from uterine and hypogastric phlebitis, and as in its whole course it seems to be a transfer and termination of this latter form of the disease, the whole account of it appears to come under the last division I have made of the whole subject.

Phlebitis of the upper and lower limbs is found either with œdema, when the veins are very much obstructed, or without œdema, when either the superficial or deep-seated veins are free from inflammation, leaving, through one or the other, a passage for the blood. When occurring with œdema, it is called *phlegmasia dolens*, the causes of which have already been enumerated. It may be well to remark here, that, as cancer of the uterus often produces phlebitis with œdema in the lower limbs, so cancer of the mammæ, acting not upon the blood-vessels, but upon the lymphatics, causing their obliteration, either in their course or in the substance of the ganglia through which they pass, and are distributed, produces œdema of the upper limbs.

Phlebitis of the Venæ Cavæ, superior and inferior.—Inflammation of the latter arises most frequently from a similar affection in some of the veins going into it; often the disease goes on to the obliteration of the vein. Inflammation of the former is a much more rare occurrence, although attended, when it does happen, with the same phenomena.

Hepatic phlebitis, of a capillary nature, after operations, is well known. In cancer of the liver and stomach, it may happen; and Cruveilhier has seen it occurring in animals, with obliteration of all the hepatic veins in consequence of a division of the two pneumogastric nerves. As the result of traumatic phlebitis, it is exceedingly important and frequent, as will be seen hereafter.

Traumatic renal phlebitis is rare.

Splenic phlebitis has occurred so seldom that Cruveilhier has never seen inflammation of the splenic vein itself, nor that traumatic capillary phlebitis, the course of which he has so distinctly traced in other organs.

We have also, testicular and hemorrhoidal phlebitis, and phlebitis of the bones, each arising from an irritating cause in operations on the parts, but chiefly interesting for their results.

Capillary phlebitis constitutes, according to Cruveilhier, the whole phenomena of inflammation; and the capillary venous system is the seat of inflammation—a position established by him in the following manner. (Dic. de Med. et de Chir. Pratique.) To M. Ribes is due the honor of having fixed the truth of venous capillary inflammation in erysipelas, puerperal peritonitis, and adynamic fever; but by a series of experiments and observations, Cruveilhier, while others

overlooked all hints from M. Ribes, proved, to his own satisfaction, the two following propositions, which he considers conclusive, and comprehending the whole matter ; 1st, that in all inflammation, the venous capillaries are specially affected ; 2ndly, that inflammation of these capillaries gives rise constantly to all the phenomena of inflammation.

The first of these propositions is proved by examining inflamed tissues, such as the conjunctiva, the mucous membrane of the pharynx, the gastro-intestinal mucous membrane, with a magnifying glass, and we shall see that the inflammatory redness has its seat in the veins. In serous membranes, too, we shall find venous areolæ, rectilinear and curved veins arranged in little pencils, stars and network, as it were varicose, forming here and there islets, from which a great number of vessels go out in every direction ; and if one has patience to follow these vessels, which is easily done on membranes, he will see clearly that they are continued by veins of less calibre. The considerable developement of veins in the diseased part, the œdema which attends the inflammation, in a word, every thing goes to announce that the veins are subjected to the capillary injection ; now capillary injection is considered a sign of inflammation, and wherever inflammation exists, whether in the periosteum, bone, cellular tissue, lungs or liver, there we find the little veins dilated.

In false membrane, which is organized, we seek in vain for anything besides venous vessels ; and it is the same, whether the deposit be recent or of long standing. It is even probable that venous blood supports accidental tissues, as in other circumstances it suffices for the life of inferior animals. In the series of beings the venous system is first developed, and first arrives at perfection.

2. Inflammation of venous capillaries, constantly gives rise to all the phenomena of inflammation. By experiments it is proved, that the injection of an irritating fluid into the arteries causes complete gangrene of the limb, which is more perfect and rapid when the blood is wholly obstructed. This obstruction may take place by the deposit of coagulum in inflammation, and the gangrenous result be as perfect. But is this one of the common phenomena of inflammation ?

The injection of irritating matters into the veins, has for its results, 1st, œdema of the limbs ; 2d, apoplectic centres in the substance of the members or in the cellular tissue ; 3d, purulent centres around the suppurated veins. The veins serve not only to bear back the

blood from the circulation to the heart, but they appear to constitute a great reservoir in which all the phenomena of secretion are carried on, and in which secretions, morbid as well as natural, are made ; and all the morbid causes which are engendered in the economy or penetrate into it, appear to find their seat in these organs. It is through their mediation that primitively local diseases become general. The arteries are merely passive conduits which convey the blood from the left side of the heart.

After this, one must see the utility of venesection in inflammation and fevers, and the little use of arteriotomy ; in erysipelas the latter has proved useless, although the quantity of blood lost has been in some cases excessive. The inflammation subsided in no degree whatever. The arterial hemorrhages, which often supervene upon inflamed cancers, far from diminishing the inflammation, seem usually to excite the erosion to a greater activity. Arteriotomy, then, since it has never an effect, which cannot be equalled by venous bloodletting with as much success, ought to be placed far below the latter, if it ought not to be wholly proscribed.

3. *The course, termination, and effects of Phlebitis.*—We have coagulation of the blood, and consequent obstruction of the veins, adhesions of the sides of the vessels, and suppuration in the course of this disease. Coagulation occurs in traumatic and spontaneous phlebitis equally, and we find it producing œdema of the limbs, by a stoppage of the blood, and a serous effusion in the part ; this is true phlegmasia dolens. With the œdema, we have a perceptibly hard and very painful cord, instead of the free vein, easily distinguishable from an inflamed lymphatic vessel, by the more superficial position of the latter, and its rose-color, and knotty appearance on the skin.

Adhesion from inflammation is also very common, and occurs as often as we have any solution of continuity. In accouchement, amputation, wounds, in every ligature of the umbilical cord, we have this stage of phlebitis. The coagulum is by degrees absorbed, and becomes sometimes filled with vessels and organized, at others entirely taken away ; impermeability being the result in either case. All this may happen without any great derangement, unless the extent of lesion be great, or the situation mortal. In the sinuses of the dura mater, for instance, the disease has no time to reach the adhesive state, the mere obstruction of the circulation proving fatal ;

in other cases, however, we have at this period our chance of cure, and here we have a good one even in uterine phlebitis.

The coagulum is not homogeneous, being the most dense where it adheres to the walls of the veins; its absorption commences equally in all points, but in its organization the external portion presents the most advanced changes. It often, in the great veins, resembles the contents of an aneurismal sac, presenting a pultaceous, grayish matter, which brings on local inflammation, and oftentimes a local abscess, which being opened, discharges its matter externally.

At times, in spite of our treatment, and as it were by some miasmatic or individual influence, the disease will run on to a suppurative state, with typhoidal symptoms, so marked that some authors have been disposed to refer this form of fever to a kind of phlebitis with absorption of pus. It may occur also from bad treatment, where inflamed parts are irritated, as in tents used to stop hemorrhage, or in trials to extract foreign bodies when the parts are already in an inflammatory state.

The pus is deposited not between the vein and the coagulum, but in the centre of the clot; not by any organization of its own, but by a sort of capillary attraction, as pus is filtered through the false membrane in pleurisy, from the inflamed vessels beneath, or the pleura itself. As the disease goes on, the coagulum is diminished, and the pus increased; different parts of the venous canal presenting the various kinds of inflammation, adhesion, and suppuration. And care must be taken to keep the distinction between the inflammation of the vein, and its surrounding cellular tissue, clear, inasmuch as they may occur together, though the latter seldom passes to suppuration.

In all this suppuration we have nothing but local symptoms, unless the pus is carried directly into the circulating current of blood. It may be absorbed as in common abscess, it may distend and diminish the vein, and it may constitute an abscess which an inattentive observer would confound with ordinary abscesses. But as soon as the coagula are broken through, and all obstacles removed, so that a mixture of blood and pus takes place, so soon typhoidal, adynamic, ataxic symptoms come on, preceded by chills and followed by death. The internal surface of the veins never presents the ordinary appearances of inflammation, that is, capillary injection, but rather a redness, as it were from tincture. This passes away as the suppurative stage comes on, until it entirely disappears, when the vessel is completely occupied by pus. This has led some authors to contend,

that pus is not secreted in the vein itself, but transported thither from some other part of the body; forgetting that the membranes, either in a healthy or morbid state, do not admit of injection. We recognize their inflammation, by the vascularity of the external membranes, by the cohesion and brittleness of the outer cellular tissue, where lymph is deposited, even when we have neither adhesion, nor pus in the vein to guide us.

We thus see what kind of inflammatory action the veins take on, and what course is pursued locally in different cases. When, however, the disease becomes more diffuse, and is attended with high constitutional symptoms, the examination leads to a far more extended field than merely the origin of the complaint. In the first case noticed among the "symptoms," Lee reports, on dissection, the following appearances. "The divisions of the vena cava were, in this instance, both affected. On the left side, the cavities of the iliac and femoral veins were filled with a dark purple coagulum, their coats being not much thicker than natural; whilst on the right side, the coats of these veins were dense and ligamentous, and the cavities blocked up by adventitious membranes, or lymph of a dull yellow color. The lower part of the vena cava, for the space of two inches, as well as the right common iliac, was obstructed by a tough membrane of lymph surrounding a soft semi-fluid yellowish matter. The right common external and internal iliac veins were imbedded in a mass of suppurating glands, the purulent fluid of which had escaped into the adjacent cellular membrane, and forced its way downwards in the course of the psoas muscle, as low as Poupart's ligament. The right hypogastric vein was reduced to a small impervious cord, and its branches were distended with coagula or lymph, of a bright red color. The right femoral and its branches were in like manner impervious, their coats being greatly thickened, and their interior occupied by coagula. The cavities of the left common external iliac and hypogastric veins, contained soft coagula, disposed in layers, which adhered to the inner tunic of the vessel. The trunk of the left hypogastric vein was contracted, its coats somewhat thickened, and its branches filled with worm-like coagula. The spermatic veins were healthy. The cellular membrane of both lower extremities was infiltrated with serum."

In the case reported by Drs. Graves and Stokes, of crural phlebitis, induced by exposure to cold and moisture, the appearances on dissection were: "The right lower extremity was found to be tense

and swollen in its superior portion, while the leg and foot were slightly anasarcaous. The sac of the pericardium contained some sero-purulent fluid ; and that portion covering the auricles and great vessels was vascular, and in many cases covered with coagulable lymph. Both lungs were in a state of extreme sanguineous congestion, with commencing solidity in their posterior inferior portion, and general inflammation of the pleura. The bronchial mucous membrane was universally red, and the tubes filled with frothy mucus.

The vena cava contained a few portions of a substance of a granular appearance, friable and of a yellowish color. This did not adhere to the vessel, which otherwise appeared healthy. In the external iliac vein, however, just above Poupart's ligament, there was a large concretion, of a similar nature, nearly plugging up the vessel, and extending into some of the minute collateral branches. The lining membrane was red, and in one point adhered to the coagulum. No puriform matter could be detected. The femoral and popliteal arteries were healthy. The cellular tissue of the limb was œdematous. The condition of the saphena vein, where it enters the femoral, is not described, although the inflammation most probably originated in the "superficial vessel."

In uterine phlebitis there is an astonishing influence exercised over other parts of the body. The brain, both in its substance and membranes, the lungs and pleura to a very great extent, the mucous membrane lining the stomach, the spleen, the conjunctiva of the eyes, the nose, have all been affected to a greater or less degree. Deposits of pus have been formed in the cellular membrane, between the muscles of the extremities, "and often in the neighborhood of the joints ; the cartilages of the joints themselves become ulcerated, and pus is formed within the capsular ligaments."

In phlebitis of the sinuses of the dura mater, Cruveilhier has not observed, as consequences, the same general phenomena and visceral suppurations which he has so often met with in phlebitis in other parts of the body. But inflammation of the sinuses being accompanied by that of the surrounding veins, we find, as we do in inflammation of the veins of a limb, centres of blood, true apoplectic centres in the substance and cellular tissue. Hence we find in inflammation of the sinuses with the collateral branches, sometimes an exhalation of serosity, sometimes an effusion of blood into the cavity of the arachnoid, at times large ecchymoses, softening of the gray and white substance of the convolutions, capillary apoplexy, and apoplectic centres.

Phlebitis occurs in the pulmonary *artery*, since it resembles a vein in its blood and internal membrane. A case is given by Cruveilhier of a puerperal woman, who having resisted uterine and hypogastric phlebitis, was attacked with inflammation of the pulmonary artery, which terminated fatally. Hard concretions filled its divisions, the clots being adherent in these parts, although they adhered strongly to the coats of the principal trunk, each clot having in its centre a collection of pus. Out of this arose capillary inflammation of the lungs, or pure lobular pneumonia, causing a rapidly fatal termination of the disease.

Phlebitis of the upper and lower limbs, generally, has as a termination an œdematous state of the part, depending on obstruction of the veins, although we have facts very contradictory coming under the pale of serous infiltration from this cause. The vena cava inferior itself has been obliterated without œdema. And, the interception of venous circulation demanding not only the obliteration of veins of a large calibre, but also that of the small veins, mark the facility with which a collateral venous circulation is established. In a case of very painful and severe œdema, which ends in death, the inflamed small veins are so slender that they might at first be taken for inflamed lymphatics.

In phlebitis of the *venæ cavæ*, we have obliteration and its consequences. In the inferior vena cava, the interruption of the blood in the lower half of the body does not necessarily follow, even when the obliteration extends below the opening, direct or indirect, of the great azygos into the inferior vena cava; the (*rachidien*) venous system constituting a collateral communication between the two *venæ cavæ*, which appears to suffice, for the most part, to re-establish the circulation.

Hepatic phlebitis terminates in abscesses in the organ, to a greater or less extent, in some cases surrounding the vena porta. When it arises from cancer of the stomach, as it undoubtedly does, we find the inflammation extending to every part of the organ; and when it occurs with ascites, the trunk of the vena porta has been found obliterated by adherent clots.

Renal phlebitis presents bloody clots, with purulent centres, in various situations. The renal vein has shown the effects of phlebitis.

In splenic phlebitis, which is usually traumatic and capillary, we have red induration, or an apoplectic centre, with formation of pus; inflammation of the splenic vein being very rare.

Phlebitis of the testicle, occurring chiefly after operations for varicocele, may terminate in suppuration of the veins and death, instead of that healthy adhesive inflammation which is the object of the operation.

Hemorrhoidal phlebitis (hemorrhoids being often on varicose veins or an erectile tissue), when it does not end in adhesion, goes on to suppuration, and the pus is borne to the liver, where it acts like foreign bodies in the circulation, and produces abscesses in that organ. Cruveilhier has seen this arise in consequence of immoderate attempts to reduce an old prolapsus of the rectum, and in consequence of an operation for fistula in ano.

Phlebitis of the bones gives rise, more frequently than any other, to abscesses of the liver and other organs; for we know from experiment how rapidly liquids are introduced, through them, into the general capillary circulation of the lungs and liver, and there produce abscess.

We have seen that a most common termination of phlebitis, traumatic or idiopathic, is in abscess of the lungs, liver, and other organs in the body. The cause of this *metastatic abscess*, which has been seen in all ages to occur so frequently after great surgical operations, destroying patients when to all appearance the wound was doing well, has given rise to much contention, and many ingenious experiments. Without going through the doctrine of the *development of pre-existing tubercles*, whose insufficiency is evident enough, when applied to acute and chronic diseases of the limbs, we find M. Blandin (La Lancette Francaise, Gazette des Hopitaux, p. 73, Encyc. xxviii.) attributing these lesions to an altered state of the blood, causing a change in the walls of the vessels. He finds the blood changed to a deeper black than natural, resembling prune juice, and not easily coagulable. This modification we meet with in certain grave fevers, and it truly causes the ecchymoses found in these cases. The same thing happens here, but upon the viscera, and we meet with visceral inflammation of lobules, circumscribed inflammation, which certainly recognize for their cause the presence of blood, which, having escaped from its vessels, becomes easily a cause of inflammation, like a foreign body. It is very easy to explain why it is on the surface of these organs that effusions, or rather these infiltrations causing abscess, show themselves by preference; it is because the pressure upon the vessels is much less upon the surface of these organs, than in the centre.

He says many people consider phlebitis at the outset in the same light with himself, but they think pus is borne into the system. This opinion does not appear to him even probable; for, examine the organ, and you will see that you can follow the course of the abscess, step by step; so that in one point you will find a slightly black ecchymosis; farther on an ecchymosis more extended, deeper black, the tissue of the organ already altered in its consistency, and become more friable; and still farther a spot blackish at the circumference, gray at the centre, and you will gradually thus arrive at the true purulent collection.

The lungs are most often affected, and especially the right lung, because it is the most developed and has a greater tendency to hemorrhage; it is particularly at the base that these abscesses form, contrary to that which happens in tuberculous abscess. Next to the lungs, come in order the spleen, the liver, the brain, the sub-cutaneous and sub-aponeurotic cellular tissue; finally, the kidneys and the muscles.

From this theory, we come to that of Cruveilhier, which he has established by many curious and ingenious experiments.

The idea which presents itself, is the pure and simple transportation of pus from the wound into the viscera, or metastasis. This doctrine of purulent metastasis rests upon the following reasons; 1, upon the diminution, or even upon the suppression of the exterior suppuration which is a constant prelude to the formation of interior abscess; 2, upon the absolute identity of pus of the wound, and that of the abscess; 3, upon the absence of the general and local symptoms, which pathologists give as characteristic signs of visceral inflammation; 4, upon the rapidity of the formation of these abscesses; 5, upon the want of inflammation in the parts lying adjacent; 6, upon the presence of pus in the veins and in the right cavities of the heart, in the midst of clots of blood.

The absorption and transportation of the pus have been attributed at one time to the veins, at another to the lymphatics, as the discovery of the latter placed them uppermost in the minds of physiologists. Moderns have divided the absorption between both. This doctrine of absorption has been adopted by Velpeau, Maréchal, and Eugène Legalois, &c., and ably defended by them. Cruveilhier has, as well as they, seen pus in the veins and lymphatics, and found centres of pus in different organs, liver, lungs, &c., but he asks if this pus may not be formed in the same place, where it is met with,

being the result of a circumscribed inflammation in the organ. The decrease, or suppression of suppuration, may it not be the effect, rather than the cause of internal disorder, in virtue of this aphorism, "*Duobus doloribus (vel stimulis) simul abortis, vehementior obscurat alterum*" ?

The following are his arguments in favor of the formation of pus in the place in which it appears ; 1, the formation of visceral abscesses is always attended with general symptoms more or less grave, which find no explanation in the state of the wound ; 2, the absence of local symptoms on the part of the viscera is no evidence of the absence of inflammation, for there exists a great number of phlegmasiæ without pain, and on the other hand it is not rare to see these *visceral* abscesses attended with a great degree of pain. But in general phlegmasia is as latent as possible ; already Pigray has noticed that in consequence of wounds in the head, many wounded, in which the fever was declared the third day of the wound, and who had not manifested any pain, died with a great number of abscesses in the substance of the liver ; 3, without doubt there exists a certain number of abscesses which do not present, without a purulent cyst, any trace of inflammation, inasmuch as, in this case, it would seem that pus has been deposited purely and simply in the net-work of the tissue of the organ ; but this absence of inflammation one does not observe but in complete abscess, if I may so express myself ; for if patients die at an advanced period of the disease, we meet with all degrees of inflammation circumscribed in the lungs or liver. As to the rapidity of the formation of pus, there is nothing which ought to astonish us, the duration of the malady being generally five or six days.

These abscesses being then idiopathic, that is, formed in the viscera by inflammatory action, we are called to the solution of this problem, viz. "To determine how, in consequence of a wound which suppurates, numerous centres of inflammation supervene in the viscera."

Anatomy is vainly called upon to solve the difficulty ; porosity, endosmosis, exosmosis, permeability, imbibition, continuity of nervous and vascular systems, corresponding sympathies, the law of consent, have all been forced to confess their want of power, and we are indebted to a series of experiments published by Cruveilhier, which appeared to him to have established this proposition :

"Every foreign body introduced into the venous system determines, when its elimination is impossible by the emunctories, to visce-

ral abscesses like those which succeed to wounds or surgical operations, and these abscesses are the result of a capillary phlebitis of these same viscera."

If we inject ink, for example, into the femoral vein of a dog, if the collateral veins do not carry the liquid into the circulation, in which case it is fatal, in a few hours the limb swells, and after death numerous bloody centres are found in the substance and cellular tissue of the limb. The large and small veins are distended with a concrete and adherent blood. If the animal lives, the bloody centres become purulent abscesses, and the clots in the veins are changed to pus. A wooden probe was introduced, from above downwards, into the femoral vein of a dog as far as the ham, and from below upwards as far as the ascending vena cava; the animal died with much oppression, becoming infiltrated in his lower extremities, and the infiltration extending as far as the thoracic parietes. All the veins of the lower limb were filled with pus, and when the muscles were divided, little centres of pus appeared here and there, which were veins filled with pus, which one could express easily. Around these veins the muscular tissue was red, friable, in a word, in a state of induration, which precedes suppuration. The healthy veins always correspond to healthy parts of the muscle, and diseased veins led constantly to a hardened centre. The femoral vein was transformed into a purulent canal, from which branches full of pus went out, instead of branches filled with healthy blood.

In these cases the phenomena were local, but had the animal lived long enough, it is probable that various abscesses would have been found in other parts, as after traumatic phlebitis. In order to determine what becomes of the pus, when it is borne into the torrent of circulation, since we cannot recognize it when mixed with the blood, we use mercurial injections into the veins, which can be recognized in their most minute parts. Wherever these injections are made, the mercury is eventually borne into the lungs, the animal dying in eighteen or twenty-four hours with symptoms of asthma or suffocative catarrh, the lungs engorged with serum. If the mercury be less, and the animal live longer, a red induration will be found round each globule; still longer, purulent centres; and longer yet, tuberculous matter; and if the animal live two or three months, you will find tubercles having each in its centre a globule of mercury.

The medulla of the femur being replaced by mercury also, we find the substance borne to the lungs and filling the ramifications of the

pulmonary artery. This is done not by absorption, but the blood, deposited in the long net-work, draws along with it the mercurial globules by a sort of attraction, which is the necessary consequence of the movement of inspiration and of the dilatation of the right auricle.

Mercury, injected into the veins of the intestines, being borne to the liver in the natural course of circulation, produced in every part of the organ red patches resembling in color lees of wine, in which were contained globules of mercury. In these experiments, the mercury does not always reach the capillaries, but, in one case, was found to have affected the right branch of the hepatic vena porta, which with its divisions was filled with viscid pus.

From these experiments it follows, that the lungs, for the foreign bodies introduced into the general circulation, and the liver for those introduced into the venous system of the abdominal viscera, are an inevitable termination, and at the same time a barrier which they cannot pass over, but in a certain number of cases. All morbid causes taken with the food passing to the intestinal canal, and arriving thence to the liver, are there retained, to be evacuated with bile more abundantly secreted, or are left to go off into the general venous circulation. Those morbid causes penetrating into the economy by other ways than the alimentary canal, and those which have passed the liver, arrive at the lungs, which arrest them often, which sometimes evacuate them by the exhalation so abundant of which the interior of this organ is the seat, and sometimes also leave them to pass to the pulmonary veins, and thence into the arterial torrent, which bears them to all the organs and places them in the general capillary system, and the hepatico-splenia communicate freely with each other, and the morbid causes pass easily from one into the other. Inflammations of the pleura, peritoneum, &c. &c. ought to take place, therefore, in certain infections of the blood. All the capillary systems, general, pulmonary, and placentary, according to curious experiments of Vizuscens, are permeable, even to mercury. We know, according to this, that morbid causes can circulate a great number of times through the capillary system, and be deposited successively in the capillary system of certain organs, and even in different points of that of the same organ.

Cruveilhier quoted from M. Dance (*Archiv. Gen. de Med.*, Dec. *1828, Jan. and Feb. 1829), who gives a graphic description of the different steps the visceral inflammation passes through, and the va-

rious states in which it is found in the same subject. He (Dance) says, "Observation has not yet taught us, whether the abscesses which supervene upon phlebitis, in the other viscera besides the lungs and liver, form themselves in the same manner; but analogy leads us to think it ought to be so, for these abscesses appear to be of the same nature, and ought to follow especially the same course."

"If, nevertheless, one reflects, 1, that all these lesions supervene in the course of phlebitis; 2, that they arrive in a few days to infiltration, and the collection of pus; 3, that they present special characters, such as an ordinary plain inflammation never develops in the lungs; 4, that by the side of an altered tissue one commonly finds a healthy tissue; 5, that the same lesions can be observed in the same organs, in consequence of an internal as well as an external phlebitis; 6, that finally the grave symptoms, with which they are attended, offer the greatest resemblance to those which announce a miasmatic infection of the fluids, one will agree that if the transport and mixture of pus with the blood in the course of phlebitis are not materially shown (for direct inspection is often insufficient, and chemical analysis cannot yet be of great utility in this respect), this opinion offers at least the greatest *probabilities*." Experiments, made by Cruveilhier, have converted these probabilities into comparative certainties. These experiments solve a difficulty which clinical observation alone never could resolve; viz. how, in the hypothesis of phlebitis, is pus borne from the general venous system into the capillary system of the liver? Ought not this pus to be arrested in the capillary system of the lungs? It seems, then, that there ought not to be abscesses but in the lungs. Now, observation proves that abscesses of the liver are very common, in consequence of wounds and surgical operations; so common that they are the first of which observers have made mention, and yet the capillary system of the liver does not communicate directly, but with the vena porta and the hepatic veins.

Mercurial injections, by passing through all the capillary systems, that of the liver, lungs, and the general system, reduce this objection to its just value.

It is then shown, with all the rigor of physical experiments, that pus, in circulation with the blood, is arrested in the different departments of the capillary system; that especially it determines to *capillary phlebitis*, or to circumscribed inflammations, which run through, more or less rapidly, their periods, to the production of abscess; that

this pus, like the mercury, is arrested most often in the lungs, then in the liver and kidney ; that it can, moreover, like the mercury, run successively through many parts of the system, and produce circumscribed inflammations in all parts of the body.

Here the questions arise, why pus, absorbed from vast collections, as in the pleura and peritoneum, does not produce visceral abscesses ? Is traumatic phlebitis necessary for these abscesses ? In what consists the difference in the two cases ? As often as a liquid susceptible of nutrition is in contact with a surface in suppuration, and this liquid is secreted by the tissues, and is a foreign body in the economy, this liquid is absorbed. This we always see, so that there is not a case in which it does not occur, as far as we know, when inflammation terminates in suppuration. But there is a great difference between pus absorbed, and thus taken into the circulation, and pus which is introduced in nature, in all its parts into the veins. During absorption a body is acted upon in such a way, that its different elements appear to be successively acted upon. Pus, for instance, appears to be at first deprived of its more liquid parts ; its solid part being absorbed more slowly, and often not until it has assumed a caseous appearance. But pus taken purely into the circulation, and mixed immediately with the blood, altered as to its crassamentum, embarrassed in its progress, is arrested in the capillaries, and determines simultaneously a multitude of centres of inflammation.

The following experiment, often repeated, proves this. A great quantity of mercurial ointment being rubbed upon a dog, caused death in 7 or 8 days, with gangrenous inflammation of the gums and mucous membrane of the mouth, and no tissue nor any liquid gave any trace of mercury, when submitted to analysis.

The three ways in which pus can enter the circulation are, 1, by direct injection into the veins or arteries ; 2, by the attraction exercised by an open vein ; 3, by phlebitis. 1. Direct injection of pus, as of any other foreign body, as we have seen, produces very severe symptoms, and abscesses. 2. A great attraction is exercised by the mouth of an open vein upon liquids into which it is plunged. This is caused by the in-drawing produced upon the vessel by inspiration, and the dilatation of the right auricle of the heart. If, for experiment's sake, we open a vein, and keeping it in this condition, introduce a liquid into the bottom of the wound, we can see the alternate decrease and increase of the fluid. This attraction is exercised upon

the air in some cases, when the orifice of a vein is kept open by some anatomical circumstance.

Venous attraction could take place only on the first day or few hours. The clot once formed, we have no longer an open way for the passage of substances through the channel. Phlebitis then alone remains, to which we can attribute all the accidents, which occur in consequence of solution of continuity of the veins.

It is then shown, that visceral abscess, and all inflammations following wounds and surgical operations, are *capillary phlebitis*, which arise from another phlebitis in some venous point, and present the same characters which the latter does, whatever may be its situation. It is not admitted that the pus secreted in an inflamed vein, and borne into an organ, conspires directly, by itself, to this generation of a state of suppuration. Pus once mingled with the blood is no longer pus, but an irritating body. The rapidity of the formation of visceral abscess, the perfect soundness of neighboring parts, do not appear to me peremptory objections to inflammation; for 48 hours suffice sometimes to produce pus in an inflamed vein; and on the other hand, the circumscribed state of the pus, and the multitude of centres, are explained wonderfully by the seat of inflammation in the capillaries.

But it may be said, if this theory is true, these abscesses should always be preceded by phlebitis, in some one of the points in the economy. Perhaps all the veins may be examined, not only those neighboring upon the wound, but in other parts of the body, without finding traces of phlebitis. To support this objection, wounds of the head have been cited, which are often attended by abscesses of the liver, without showing any other trace of inflammation of the veins. But, the experiment of introducing mercury into the medullary canal, shown above, and its results, prove that if the state of this canal or the spongy tissue of the bones was not examined, these observations are not of the slightest value. Dance offers as an explanation of this, that the deep veins are inflamed; not only those which spread themselves into the brain and its membranes, but also those which penetrate the bones of the cranium (the diploic veins). Pus formed in these veins should go to the liver, or lungs, as from all the capillary venous system; for the liver is not exclusively affected in wounds of the head; and if a great number of observers have unitedly made mention of abscess in the liver, it is that they are contented, in the greatest number of cases, with observation of this viscus alone, the

lesions of which have appeared to give them a sufficient account of the phenomena. Experience proves that the diploic veins are found purulent, in most cases of wounds of the head co-existent with abscesses of the liver and lungs. The visceral lesions have been found in the liver, lungs, kidneys, &c. Now, as inflammation of the veins of the bones, not only those of the diploe, but of all the bones, gives rise to visceral abscess, this general proposition may be established, viz. phlebitis of the bones is one of the most frequent causes of visceral abscess, in consequence of wounds and surgical operations, in which the bones have been concerned.

The spongy tissue of the bones has a circulatory system, and is constituted in such a way, that an anatomical observation will teach us how readily inflammation of these veins will lead to the same consequences as ordinary phlebitis. Perhaps even, suppuration of these areolæ has results more rapidly and necessarily grave, than inflammation of the free veins. In six hours, mercury injected into the interior of the medullary canal, arrives at the lungs, and it may reach these organs in even less time.

With this susceptibility on the part of the bones, great care is necessary in all operations upon them; and a law laid down by Cruveilhier, which I have mentioned before, may well be repeated here; that we should never touch a wound, when it is yet under the impression of violent inflammation; for no operations give place more infallibly to the formation of visceral abscesses, and consequently whose results are more sad, than those which are practised upon the bones, especially when one repeats the attack several times, with many days intervening. In all the inflammations accruing in consequence, the veins are ever ready to participate, with the terrible consequences we have already seen.

With regard to the *treatment* of phlebitis, which should claim attention, but little can be said with any degree of satisfaction. When it occurred from blood-letting, Hunter applied firm compresses above the wound, to produce obliteration of the canal of the vessel, by bringing its sides in contact; this does not, however, prove successful. We resort chiefly to antiphlogistics, with leeches along the course of the inflamed vessel, applying them repeatedly and in large numbers, if the severity of the case demand it. The arm should afterwards be covered with an emollient or saturnine poultice, or an evaporating lotion. Diaphoretics and cooling saline purgatives should be administered.

When there is doubt about the safety of general bleeding (which is exceedingly useful in some cases), on account of its hastening all secondary inflammations, which are running on to suppuration, we may resort, with great success, to tartrate of antimony. In symptoms of uterine phlebitis, or any form of puerperal fever, we resort actively to large blood-letting, and leeching, and according to the peculiar character of the case, employ mercury, opium, cathartics, diaphoretics, blisters, and whatever other means we have of controlling the disease. Often one general bleeding, or application of leeches, with five grains of submuriate of mercury, and an equal quantity of antimonial powder, or Dover's powder, with cathartics, have subdued the complaint.

If, however, the phlebitis has gone on, whatever be its cause, and has reached a suppurative state, with metastatic abscess, we are called upon for a totally different mode of proceeding. Theory seems to indicate the employment of tonics, diffusive or fixed, such as acetate of ammonia, cinchona, and of sudorifics taken internally; warm applications, vapor baths; purgatives and emetics; repeated vesicatories; energetic diuretics; and, above all, calomel, to draw from the intestinal mucous membrane a considerable fluxion. Discharges from the bowels appear to be more beneficial than any other mode of proceeding. After pointing out this method, Cruveilhier concludes that our treatment should be applied chiefly in the first period, that of coagulations of the blood; for, suppuration once declared, and pus once in the circulation of the blood, medicine is generally powerless.

Velpeau (*Encyc. x. Bull. Clinique*, p. 65) treated a case by mercurial frictions. In his case, there reported, he says, there have been employed against phlebitis, blood-letting, compression, mercurial frictions, which have been used in almost all inflammations. During compression the inflammation continued unabated. Leeches and scarifications were equally useless. Finally, frictions with mercurial ointment had an action, whose happy result one cannot deny.

In traumatic phlebitis, with suppuration, the course of the disease is so rapid, and occurs in a constitution already stricken, with so severe a shock, that we find little time for treatment, and little benefit from it when we have time. In nine cases reported by M. Duplay (*Encyc. xxv. L'Experience*, p. 9), of phlebitis in consequence of amputations performed by Dupuytren, Blandin, and Breschet, the pa-

tients succumbed rapidly after the following manner. One or two examples will point out the general course of the whole.

Obs. II. Amputation of a leg in a woman aged 60, in consequence of a comminuted fracture. Union by first intention. On second day, slight local symptoms, which increased on the following days. General symptoms. Death on 17th day after operation. An abscess in the brain; another in the cerebellum. Pleurisy of right side. Abscess in the lungs. Two abscesses in the liver. Pus in the medullary canal, and in the cells of the diploe.

Obs. IV. Disease of knee-joint. Amputation of the thigh. Chills. Local accidents. Abscesses in different regions. Pus in the metacarpo-phalangean articulation, in one of the radio-carpal, and in the right scapulo-humoral. Abscess in the lungs. Phlebitis of the crural vein.

In these cases, no treatment appears to have been available, none having power to conquer the disease in all its severity.

North Andover, January 27, 1843.

[The connection of the disease, as yet fortunately but little known in this country, styled metastatic abscesses, purulent absorption, &c. with phlebitis in the suppurative stage, as ably demonstrated in the foregoing paper, we are inclined to consider as so perfectly well made out as to allow but little ground of belief that it can originate from any other primitive source except a similar affection of the absorbent system. But we must object to the mechanical, so to speak, explanation of the causation of these abscesses, as given by Cruveilhier. Any one who has seen cases of this description, the rapidity with which death ensues upon the attack, and the purulent deposits not only in the lungs and liver, but in the serous, and large and small synovial cavities, can with difficulty refuse to consider the disease as something more than the effects of a number, however infinite, of small local abscesses, as it must evidently be regarded by Cruveilhier. The blood is in some manner poisoned by the entrance of this pus; and we feel strongly inclined to look even beyond the phlebitis for the first cause, some morbid influence which has disturbed the healthy inflammation of these veins. This cause, of the nature of a morbid poison, may be the same for the difference between simple peritonitis and that of puerperal women, healthy inflammation and erysipelas, &c. Some ex-

periments which we have lately seen, as performed by a M. D'Arcet, but upon which we cannot this moment lay our hands to quote accurately, incline to the belief that *laudable pus* carried into the veins is innocuous; a confirmation that there is something peculiar in the nature of the original phlebitis in these cases.—EDS.]

ART. II.—*Case of Natural Labor succeeded by violent After-pains and Mania.* By EDWARD WARREN, M.D.

ON the 17th of November, 1832, I was summoned to attend Mrs. J., aged 38. I found her far advanced in labor with her ninth child. It was six years since her last pregnancy; and during the present, she had been subject to hysteria, depression of spirits, and great anxiety with regard to her approaching confinement.

I saw her at about half past five, found the pains strong; the membranes soon ruptured, with a free discharge of fluid, and the child was born at half past six; a good sized, healthy girl. In twenty minutes after, the placenta came away spontaneously; one of rather large size. There being no flooding, and the patient not exhausted, she was immediately put to bed. I visited her about two hours after this, and found her very comfortable; she had some pains, but they were slight. I left four pills, each containing one grain of camphor, and half a grain of opium, to be taken one every two hours, if they were required.

Nov. 18. Has not taken the pills, and has not slept, pains continue; is now rather nervous. Directed to take a pill every two hours.

I saw her again at five the same day, and found she had taken all the pills but had not slept. The mental excitement had rather increased. At half past five, having just had time to reach home, she sent for me in great haste. On arriving, I found her and the females in attendance in great alarm. They informed me that she had been seized with violent bearing-down pains, the lochia had ceased, and there was a great discharge of clear fluid, like water. This had given them the belief that there was a second child. On examining, during a pain, I found the uterus in tremendous agitation, bearing

down with a force such as I have rarely seen, even in the last stage of labor. At her desire, Dr. McKean, her former medical attendant, saw her with me. He suggested that the pain might possibly be induced by a portion of the placenta having been retained. By his advice, I directed her to take two grains of opium in a pill, every two hours until relieved.

19th, A. M. Has taken nine grains of opium, without the slightest effect. Has had no sleep; the pain and nervous excitement continue. The aqueous discharge has also continued. I directed hop fomentations to the bowels, a tea-cup full of strong valerian tea every two hours, and Ol. Ricin. \mathfrak{z} ij. immediately.

5, P. M. The oil has not operated, but she is now much calmer; the pains have continued, but have rather diminished in force. I directed Ol. Ricini, \mathfrak{z} i. to be given in one hour, if there was no previous operation. If no operation in three hours after this, an injection of oat-meal gruel. After the medicine had operated, two grains of opium, and twenty-eight grains of camphor alternately every hour.

20th. Very much better. Had the injection, which operated powerfully. Took two of the camphor powders, and two of the opium pills, and had some light sleep.

P. M. Rather more nervous. Aqueous discharge less. Medicines have continued to act on the bowels through the day. Directed to drink freely of the valerian tea; and if necessary, to continue the pills.

21st. Sitting up, quite comfortable. Did not take any pills, and had no sleep. Aqueous discharge nearly ceased, and now of rather a yellowish color. No evacuation. If none before noon, directed to take an ounce of the oil.

22d. Took three ounces of the oil before it operated. There has been a slight return of the lochia. The aqueous discharge has ceased, and the urine is of the natural color. No sleep. Has been for some time past in the habit of using soporifics.

She was now so much better, that I discontinued my attendance; but as I visited other patients in the same house, I saw her occasionally.

In about three weeks after her confinement, she got out, and soon went to hear an evening lecture by an infidel preacher, who was then producing considerable stir in the city. The bad air of a close crowded room, the fatigue of long sitting in a constrained position,

the exposure of going from a heated room into the cold—moreover the exciting doctrines of the preacher, produced, as might have been expected, a powerful effect upon her nervous system. I was soon sent for to visit her again, and found her in a very excited condition. I prescribed the usual sedatives, but without much effect. On about the fourth day after her attendance at the lecture, she arose very early in the morning, walked some distance in the midst of a violent rain, to Charles River Bridge, and threw herself into the water. She was fortunately seen, a boat was got out, and she was speedily brought home, but in a condition to keep her bed for a day or two.

Now arose the question of insanity. She could not be restrained sufficiently at home, if she should persevere in her intention of destroying herself. On the other hand, she was perfectly aware of what she had done, and could answer rationally all questions that were asked her.

An intention to commit suicide has been considered sufficient proof of insanity; and some modern medical writers have quietly set down many of the celebrated characters of ancient times, whose names have been extolled for ages, as so many madmen, because they terminated their existence by their own hand. Yet this conclusion is altogether unfounded. If Cato, for example, believing death to be an eternal sleep, and after calm reflection, considered such a sleep preferable to an existence held under certain conditions, regarding himself also as perfectly master of his own life, and suicide as a virtuous and heroic action, can we justly say that he was insane? He argued correctly according to his knowledge. His conclusions were correctly formed from the premises, and these premises were not rashly assumed, but drawn from all the light that the philosophy of his time would give.

In our day, even, let suicide once be declared to be justifiable, instead of being in the highest degree criminal and disgraceful, and it would become common. The mere love of life, or the fear of ceasing to be, is not sufficient to deter a certain class of minds from suicide, when impelled to it by mental suffering, or by the dread of disgrace. It might also be argued, that to him who believes that death is the end of existence, suicide is in many cases perfectly wise and justifiable; since it is wise of two evils to choose the lesser, and the ceasing to be is better than the endurance of mental suffering. But this discussion is out of place here, since in this case, I suppose the lecture alluded to, to have been attended merely out of curiosity,

although I do not doubt its effect, under the patient's circumstances, in producing mental excitement and unsettling her mind.

The intention to commit suicide, therefore, is not of itself a proof of insanity. But if a person, in full possession of his mental powers, able to answer all questions correctly and coherently, to draw sound conclusions from premises judiciously chosen, is nevertheless impelled by an impulse which he has not sufficient moral power to resist, to commit crime without a motive; to injure himself or to injure others; or to destroy their property or his own, he may safely be pronounced insane, and the subject of civil restraint. The public good requires his confinement. The man who is addicted to the habitual use of intoxicating liquors, and who against his will and his principles constantly recurs to what he is aware to be his bane, is a specimen of this kind of insanity, and it would be well if public provision were made for the confinement of such persons.* In like manner, an individual who has allowed himself, from infancy, to be guided by a strong passion, at length becomes insane; and although he may be prudent in the management of his property and rational in his conversation, he is nevertheless a monomaniac, and the proper subject of restraint. Cases of this kind are mentioned by M. Esquirol, who has so justly drawn the distinction between mental and moral insanity.

In such cases it is a matter of no small difficulty to draw the line between sanity and insanity, and it was with some hesitation that I signed the necessary certificate. It was her own wish, however, as well as that of her friends, and in fact the only means of restraining her from mischief, that she should be removed to the Hospital at Worcester.

There she remained for several months with some improvement, though not sufficient to induce the physician to discharge her as cured, until her husband, getting out of patience, insisted upon her return. On her return home, I found her calmer, though not disposed to allow that she had received much benefit. After this, she continued pretty much the same, with some slight improvement, complaining most of the time of pain in the back, indigestion, or bad feelings at the stomach, headache, &c. I gave her chamomile, quassia, valerian, and similar medicines, and there was some improve-

* It differs, it is true, from true insanity, by being temporary and kept up only by the action of a particular cause; but if the action of this cause is continued sufficiently long, the effect becomes permanent, and no one hesitates in pronouncing the subject insane.

ment from year to year. She had abandoned all disposition to commit suicide, though in one instance, indeed, she attempted to throw herself out of the window; but as the attempt was made in the presence of her husband and a grown up daughter, by whom it was easily prevented, it was considered merely as a feint, and the result of obliquity of temper.

In 1833, she became again pregnant, and during this pregnancy her health improved. She had none of the unfavorable symptoms which attended the preceding. In August, 1839, she was delivered of a healthy boy. The labor was as rapid as the preceding, but in all respects favorable. After her recovery, she continued cheerful, and in all respects better than I had ever seen her before. Having lost her last child by lung fever in 1835, it is possible that the constant anxiety with which she watched over the health of this one, had a favorable effect upon her mind, by diverting it from the consideration of her own health and the concerns of her family; her husband being intemperate. However this might be, she continued in good health of body and mind when I last saw her in 1841.

Remarks.—One of the principal circumstances attending the labor first described, was the violence of the after-pains, and the suddenness of their occurrence. As they gradually subsided, without the discharge of any portion of the placenta, and as this mass came away spontaneously and apparently whole, they could not have been produced by a cause of this kind. How far they might have been excited by mental causes I will not undertake to say. I have never seen after-pains in any degree so violent, in any other case. The quantity of opium taken within a short period, without any apparent effect, is another circumstance worthy of attention. Very large quantities of opium or laudanum are often given in spasmodic disorders of the stomach, &c., without producing sleepiness or any subsequent effect whatever, except obstinate constipation. It is remarkable that as soon as the spasm or pain ceases, the opium which has no means of escape from the system, unless it is by perspiration or exhalation, does not produce its usual effects. We should naturally suppose that as soon as the pain or spasm ceased, the opium would begin to act. We find, however, that this is not the case; the patient is as wakeful, rational, and free from nausea, as if no opium had been taken. The large and continued discharge of aqueous fluid, was another remarkable feature of the case. I considered at the time that this was produced by a large accumulation of fluid in

the serous vessels of the abdomen and the thighs, occasioned by the pressure of the gravid uterus, and that this was the cause of the bad symptoms which had attended her pregnancy.

The manner in which the mental disturbance came on with the first pregnancy and subsided with the present, is also worthy of note. It is obvious that any cause which produces so powerful a change in the system as pregnancy and labor, may produce an effect either beneficial, or the reverse, as the case may be.

December 27, 1842.

ART. III.—*On some of the Circumstances which determine the Food of Man.* By AUGUSTUS A. GOULD, M.D., Boston. Read before the Boston Society for Medical Improvement.

THE subject of the kind of food best adapted to the anatomical structure and physiological well-being of man, is one which has been, and doubtless will continue to be, much agitated. That man may eat vegetables, seems to be universally conceded; and the mooted point is, whether he may also eat meat. Very early records, whether sacred or profane, distinctly inform us that animal food was a part of ancient diet. It was distinctly specified in the Mosaic law that certain animals were clean for food, and others were unclean. But modern caprice or necessity has shown that all the animals proscribed as unclean, are digestible, nutritive, and not unpalatable, at least after subjection to culinary processes, and when well savored with condiments. Pork is one of the staple articles of our country; and few among us abhor it in any form. Baron Larrey informs us that horse soup is very palatable; and Mr. Catlin almost causes our mouths to water, while he depicts the relish with which the prairie Indians engage in their dog-feasts. The Igana is a favorite food of the Texans and Mexicans; and who now-a-days declines a good turtle soup? All these animals were unclean to the Jew. So, too, the African eats ants and grubs and serpents; and while we smile, at the Mahometan Arab, who feasts on locusts, he smiles with equal complacency when told that Americans eat crabs and lobsters.

Though history and science and common sense seem to have sufficiently corroborated the dietetic maxim, "*sanis omnia sana*," showing not only that man *may*, but that he *should* be omnivorous;

yet as Grahamism and physiological societies are still somewhat in vogue, it may not be amiss to take a glance at the anatomical and physiological reasons which support this view. The facts will not be new, and they must necessarily be brief.

The anatomical and physiological differences which are regarded as indicating the appropriate food of an animal, are to be looked for in his organs of prehension and manducation, the alimentary canal, and in geographical relations.

Cuvier labored, most successfully, to establish the relation which the teeth bear to the organs of prehension and the structure of the skeleton in general, so as to be able to draw from the teeth alone, well-grounded generic characteristics. His labors on this point have been further carried out by Fred. Cuvier, and since the researches of Mr. Owen into their internal structure, the teeth have assumed a new importance as distinctive characters. So that, so far as regards the mammalia, the teeth are now considered the most infallible marks of both generic and specific distinction; and the dental formula always enters into every specific description. This natural ground for arrangement has been carried into the other orders of animals; so that even in the insect tribes, the trophi, or organs of manducation, are always examined; and so far as they have been examined, they afford characteristics equally as unvarying as in the mammalia; and the distinction between the membranous jaws of the vegetable feeders and the ivory mandibles of the predaceous beetles, is even more remarkable than between the teeth of the carnivora and herbivora among the mammalia. So, too, the slender limbs and rapid bounds of the tiger-beetle as infallibly indicate his fitness for a predatory life, as the curved claws and supple frame of the feline race. The same adaptation of parts is found throughout the whole series of animals.

I need not say that the indications of the natural food of an animal, as derived from the teeth, are drawn from the form of the terminations or points of the teeth, and from the manner in which they are allowed, by the articulation of the jaw, to come in contact with each other. As to the terminations of the teeth, there is every possible variety between the broad, flat, rasping teeth of the elephant and some of the Rodentia, and the pointed and sharp-edged teeth of the tiger. In these instances, the proper food is unequivocal; and according as, in other animals, the teeth combine the peculiarities of these types, so is their food judged, *a priori*, to approach to the purely vegetable or animal character. In all extreme cases, observa-

tion proves this indication correct beyond dispute ; but in the intermediate cases it is not so easy to determine—and in no case is there more open ground for discussion than in that of man, who, by his dental formula, is placed intermediate between the extremes of animal and vegetable feeders. He has neither the broad teeth of the horse, nor, like him, a destitution of opposing incisors ; nor has he the lengthened canine teeth, nor the sharp-edged, pointed, carnivorous teeth of the dog. The articulation of his jaw is not transverse, and admitting only a vertical motion as in the lion, nor is it longitudinal, allowing a rasping motion backwards and forwards as in the beaver ; but is constructed so as to admit of a free rotary movement, or of simple upward and downward motion, as may be desirable.

Men, however, who seem not to be willing that the chain of nature should be continuous, heedless of the maxim that *natura nihil per saltus fecit*, and not content with anatomical indications or the deductions of analogy, must needs put forth their efforts in endeavoring to prove that man is constructed for a vegetable feeder, and was designed to be so exclusively ; when the utmost of the amount of their argument seems to be, that because it is found that man *may* live very well on vegetables exclusively, therefore vegetables are his appropriate food.

The teeth may well be regarded as determining the nature of the food to be masticated. Wherever we find broad and flattened or tuberculated surfaces terminating them, we may safely say that vegetable food may enter into the diet of that animal. Wherever we find canine teeth, and sharp-edged or pointed cheek teeth, we may pronounce the animal to whom they belong to subsist upon flesh. The development of the canine teeth, however, is not a measure of the carnivorous propensity of an animal, for they are more developed in the wild boar and the babouïssa, than in the lion and tiger. They are more developed in the ourang outang than in man, though the former is supposed seldom if ever to partake of animal food when he can obtain fruits. They are never wanting, however, in the carnivora, and when combined with the sharp cheek teeth, always indicate a capability of taking and digesting animal food.

One exception, at least, may be stated to the remarks just made. The *Orycteropus*, or ant bear, which feeds on insects, has the teeth smoothly truncated. This exception, if it be one, serves only to prove the rule. The teeth have no eminences or layers of enamel, like the broad teeth of graminivorous animals, but are perfectly smooth

and exactly calculated for reducing the little insects on which they feed, to a proper state for digestion.

As to the mammalia, we might be satisfied with the information to be obtained touching their natural food, from the structure and arrangement of the teeth alone, especially when taken in connection with the organs of prehension. By these alone the habits of extinct animals, whose solid parts only remain, are determined ; and all other parts of the skeleton are found to conform to the habit thus indicated. But we are not left to rest on this evidence alone in animals whose soft parts may be examined. The alimentary canal also affords almost unequivocal evidence as to the habitual food of an animal, independent of every other consideration. As a general rule, the stomach is simple and the intestinal canal is comparatively short or of small extent of surface in the carnivora. It is complicated, and the canal long, in the herbivora ; and there is a corresponding modification in the structure of the stomach and length of the intestines where there is a mixture of animal and vegetable food, in whatever proportions. These modifications take place in different parts of the canal, and are so various in combination, that though the general rule is well established, there are many apparent exceptions, which must remain such till the relative importance of each portion of the canal is better understood.

The stomach seems to be more certainly indicative of the kind of food for which it is designed, than does the rest of the canal. In this organ the aliment is reduced to a homogeneous mass, and very soon after leaving it the ingesta seem to have assumed the state in which they may be taken into the circulation ; so that the long tract of intestines seems to be designed rather for presenting the nutrient matter, as it is moved along, to the mouths of the absorbing vessels, than for any very active process of assimilation. That they are of some importance, however, other than as mere absorbing surfaces, is evident from the numerous modifications in size and proportionate length which they exhibit.

We might reasonably predict, therefore, that the stomach destined to receive aliment already nearly assimilated to the system, would be much more simple than one in which articles that have not already assumed an animal organization are to be received. And so we find it. The stomach of the carnivora is a simple, smooth, membranous bag, with no arrangement for preventing a speedy passage of food through it. The stomach of the herbivora, on the contrary, is mul-

tiplied and complicated—and in the ruminating animals especially, there is not only a succession of digestive pouches, arranged in such a manner as to cause great delay of the food in them, but a provision by which the nutrient mass may be raised into the mouth again for further mastication. There is every intermediate modification between these two extremes; and man, with a stomach prolonged at its cardiac extremity, lined with its corrugated mucous membrane, and closed by its rigid pylorus, would, on this account also, seem designed for a mixed diet.

The intestinal canal, as I before observed, affords a much less certain indication of the food it is intended to receive than the stomach. As a general rule it is found to be long in herbivorous and short in carnivorous animals. In the lion it is only three times the length of the body—in the sheep it is twenty-eight times—in man it is set down at five and a half times the length of the body. But it should be remembered that in the length of a man's body we reckon the lower extremities, while in quadrupeds we measure from the tip of the nose to the tuber ischii. Calculating for man in the same way, the intestinal canal would be at least ten times the length of the body. But there are some carnivora that have the canal proportionably as long as even the sheep, such as seals and porpoises—while the sloths, which are exclusively vegetable feeders, and some mice, have them as short as the lion. There are several modes of compensation, however, which will go far to reconcile these apparent discrepancies from the received theory.

One is, that when the canal is short in a vegetable feeder, its capacity or diameter is large; and on the other hand, where it is found to be very long in carnivora, its diameter is small and its interior smooth. The proportion of the diameter to the length varies greatly—so that while in the shrew-mole, where the intestine is unusually short, the proportion of length to breadth is only as 19 to 1—and in the hyena, where the canal is much longer than in other carnivora, Cuvier gives the proportion as 110 to 1. It will be at once seen that so great a diversity will go far to explain apparent exceptions. It is the extent of the absorbing and delaying surface to which the food may be presented, rather than the actual length of the canal, which should indicate an adaptation for vegetable or animal food. Add to this, that in some animals the interior of the tube is obstructed by folds and corrugations of the lax mucous membrane, while in others the membrane is tense and its surface smooth. Let the diameter of the

tubes be the same, and their interior of similar character, and we shall find the tube of the herbivora invariably longer than that of the flesh eater. Moreover, in others, the size and length of the cæcum presents another important modification, and in some animals this organ is multiplied. The proportion of the length of the small and large intestines, too, are ever varying; and in addition to all this, it is found that the temperament of an animal produces varieties; for instance, the sloth, in his habits, is what his name imports, and the action of his organic functions is as dilatory as his locomotion. His vegetable nutriment would therefore be a long time retained in the alimentary canal, although it is a very short one.

These are some of the practical difficulties met with in attempting to deduce from the length of the intestines a general rule by which to decide with certainty as to the food they are designed to receive. Still, when we so constantly find, in the extreme cases, that where we have carnivorous teeth, they are succeeded by a stomach, and this by an intestinal canal, of a remarkably distinct character, such as we ascribe to a carnivorous animal; and that when we have flat, grinding teeth, we in like manner have an equally peculiar but very different stomach or canal, and know these to belong to an animal feeding exclusively on vegetables; we ought not to be too sceptical as to the intention of the intermediate forms, especially when experience proves their capability, if not their fitness, for digesting a mixed diet of animal and vegetable food in various proportions. In no case is the fitness of things better illustrated than in the two tribes of bats, one of which is frugivorous and the other insectivorous. In the first tribe the teeth have flattened crowns, and the stomach is complicated, as in other vegetable feeders. In the second, or insectivorous tribe, the teeth are surmounted by conical points, and the stomach is very nearly allied to those of the true carnivora.

In addition to this, there must be the capability of procuring the food for which the digestive organs seem designed. The cat tribe are evidently well calculated for predatory animals. The hawk might scratch the earth for seeds or insects, like the gallinaceous birds, but he would find it difficult to pick them up with his beak. The duck might pursue the smaller birds with nearly as much velocity as the hawk, but he would have no means of securing the prey when overtaken. The bear is provided for attack and defence, in contending with animals whom he makes his prey; but he is also capable of climbing trees, and providing himself with fruits, when

necessity or inclination prompts. The wild boar is in like manner capable of capturing prey; but he is also provided with a snout for turning up the earth in search of roots: these last are therefore promiscuous feeders. If we look at man, we find him having dominion over the fish of the sea, the fowl of the air, and over all the cattle and every creeping thing. None of them can elude his vigilance, and although naturally the most defenceless of all animals, yet nothing can overcome or withstand his arts. May we not conclude from this, also, that man was structurally designed to partake, beneficially, of whatever of all these things best pleased him?

There is one other element in the condition of man, which seems to me to be of considerable importance in determining, not only his omnivorous nature, but also the proportion in which the different kinds of aliment should be used. It is, that man may be and is a resident in all climates and regions; while in some regions he can never be sure of suitable animal food, and in others, and I refer to the tropical regions, if he can procure animal food, the much more ready and abundant supply of nutritious vegetables leads him to choose them almost exclusively. In the frozen regions, vegetation is bound beneath frost and snow during nearly the whole year, and the brief space of seedtime and harvest cannot be depended upon to supply the wants of the remainder of the year. In Iceland, it is said that bread is unknown, as a common article of diet. The inhabitants of those northern regions subsist upon, and relish, the flesh of the reindeer, seal, whale, and other marine animals, such as our stomachs would abhor, and such as would probably prove even indigestible to them, in more temperate climates. In the regions of tropical heat, on the contrary, nutritious vegetables grow profusely and almost spontaneously, so as to constitute nearly the whole diet of the unnumbered millions of those regions. It is said that five or six days labor in a year will secure the growth of plantains enough for the support of a family. There, too, is rice, a grain which feeds as many people as all other grains united; the banana, the bread-fruit, the cocoa-nut, sago, tapioca, cassava, arrow-root, yams, and other vegetable productions, which furnish inexhaustible stores of supply. There, wild animals are for the most part carnivorous; the nature of the vegetation is not adapted to grazing, and ruminants consequently degenerate as articles of diet. In the temperate regions we have a good grazing country, and beef, mutton, and venison are found in their greatest perfection; while the cereal grains, though various and

excellent, are not produced to an extent to render it prudent to depend wholly upon them for subsistence.

Now, while we argue that, as man's constitution enables him to adapt himself to all climates and all vicissitudes, therefore he must be organized so as to subsist upon whatever food may be available in any position; may we not also argue that, as nature in one region provides the greatest profusion of vegetable nutriment, while in another little else than animal food is to be obtained, she thereby indicates the proper diet in each region—the diet which is the best adapted to the greatest integrity of the human system. Whatever be the reason of this, we know the fact, that while man at the frozen regions is compelled to live on fish and flesh, man at the equator lives almost exclusively on vegetable food; and the laboring man in the temperate zones lives upon a mixed diet. Vegetable food seems to supply all the demand of the system in warm climates, where the heat precludes severe or long-continued exertion. In the cold climates, where there is a great expenditure of animal heat, the stimulus of animal food may be requisite. Each of us has experienced how different is our appetite for animal food in summer and winter, and how much more moderate is our desire for food when enervated by the heat of summer, than when invigorated by the cold of winter.

If we take for granted what seems to be so well supported by theory and practice, that man is best suited with animal food at the poles, and with vegetable food at the equator, may we not, with a great degree of accuracy, assign to a man the proportions of animal and vegetable food proper for him, by the degree of latitude in which he lives. In this prescription we must take into consideration the admitted opinion of comparative anatomists, that the digestive organs of man indicate him to be more of a vegetable than of an animal feeder; so that at 45 degrees of latitude it would not be suitable for a man to take equal quantities of vegetable and animal food, but a preponderance of vegetable food; and so on, diminishing the proportion of vegetable food as we proceed to the poles, and of the animal food as we approach the equator.

May we not also deduce rules from this theory for the regulation of the diet of the different temperaments and occupations of men, in any particular region—rules which experience proves to be judicious, though drawn perhaps from other grounds. For instance, if we in Boston should find a man of sedentary habits, little exposed to the

vicissitudes of weather and leading a sluggish life, such as characterizes the inhabitants of warm countries, should we not say that his diet ought to be principally vegetable? And on the other hand, should we not approve of an additional proportion of animal food for the man whose occupation involved vigorous exercise, or who was required to be fortified against great exposure from any cause? Such, at any rate, is the diet which we find adopted by men in the conditions to which we have alluded, from natural craving; and under a diet thus modified, they respectively maintain the state of body most suitable to their vocation.

It is no argument on the contrary, to say that every herb and every tree or its fruit was prescribed to man for food in the garden of Eden, for it was prescribed in like terms to every beast, fowl, and creeping thing also; or that there is reason to suppose that in primitive times man's food was exclusively vegetable; for on the ground of antiquity we might with equal reason contend for nudity, or the fig-leaf apron, or the troglodyte cave, as the proper habiliment and habitation of man.

I have not attempted to show that man cannot subsist without animal food, for it is plain that he can; or that he is not better off without animal food than with it, for it is also plain that under many circumstances an exclusively vegetable diet is best. But I think it is also plain that his organization provides that he may be omnivorous; his adaptation to procure all kinds of food allows him to be so, and his capability of inhabiting all climates requires him to be so. And I think also, that the proportion of animal and vegetable food best for him may be calculated on the general principal of his distance from the equator, combining, in the calculation of individual cases, temperament and occupation.

ART. IV.—*Have Variola, Varioloid and Varicella a common origin? A few considerations and cases bearing upon this question.* By WM. EDWARD COALE, M.D.

IT is now nearly twenty-three years since a formal proposition of the above question was made. It is true, that long before, many writers had noticed occasional resemblances between the three diseases, and in two or three, something approaching a suggestion of

the possibility of their close connection may be found, but their suspicions and surmises never seem to have been supported by any particular experiments or observations. Morton, in his work upon small-pox, published in 1694 (quoted by Dr. Thomson), describes minutely the different forms of these three diseases, applying for the first time on record, the term *chicken-pox* to the mildest, and seems to consider them as merely varieties of one disease. He also considers the difference between these varieties as often depending upon the patient having previously been affected with small-pox. Two other writers, also quoted by Dr. Thomson, one of whom, he says, may be considered as echoing the opinions of the Leipsic school of that day (1700), express the same views with Morton; but in the remainder of the quotations by Dr. T., from many of the writers of the two last centuries, I cannot see much to support the assertion, that "all the varieties of this disease, whether mild or malignant, distinct or confluent, vesicular or pustular, genuine or spurious, chicken-pox, swine-pox, sheep-pox, wind-pox, stone-pox, and horn-pox, have generally, if not universally, been supposed to have had only one origin." *

In the year 1818, Dr. Jno. Thomson, then attached to the military hospital at Edinburgh, had his attention much excited by the simultaneous prevalence of three marked varieties of eruptive disease. One of these was the genuine confluent small-pox; another, a milder disease, more irregular in its phases, the varioloid; another, a very mild vesicular disease, of short duration, the chicken-pox. Of three persons exposed to the same influences, he found that each one might have the disease in a form different from the others. The paper suggested by these observations, together with many cases, will be found in the Edinburgh Medical and Surgical Journal, No. 56, and also in the appendix to Dr. Thomson's letter to Sir James McGregor, published in London in 1820. Dr. T.'s views are still further set forth in his "Historical Sketch of the opinions entertained by medical men upon the varieties of Small-Pox," published in London in 1822, quoted from above.

Since the above publications, the question has been much discussed, and it would be difficult now to say what is the prevailing opinion. Some consider varioloid a modified small-pox; others look upon it as a distinct disease, though, singularly enough, many of the

* Historical Sketch, &c., &c., p. 30.

latter allow that chicken-pox is an abortive small-pox. Some, again, associate varioloid and chicken-pox, and only defend the distinctiveness of small-pox. I might quote authors in numbers, but there would be neither time nor place to make an analysis of their many and varied arguments. Rayer (*Maladies de la Peau*, tom. i. p. 509), who advocates the identity of the three forms of variolous disease, takes a comprehensive view of the arguments both for and against his side of the question, and answers the latter in detail.

In the arguments of Rayer and of others, one thing has struck me, a defect in the evidence. In no instance is it clearly and indubitably shown that but one contagion was at work. It is true, that several make their defence very good upon this point, but there still is a loop-hole left for doubts. In the following relation I think that I have supplied this defect in the evidence upon the *identity* side of the question, and striving to avoid any suggestions of my own, I give the cases for what they may be worth, premising that the facts now offered presented themselves to me with my mind perfectly unbiassed.

The U. S. frigate Columbia, to which I was attached as one of the assistant surgeons, left Norfolk, May 5th, 1838, and arrived at Madeira (Funchal) on the 27th. Sailing thence June 3d, she arrived at Rio Janeiro July 10th, whence she sailed on the 29th. Up to this period the health of the crew had been comparatively good, since leaving the United States. At Rio, the small-pox is always, I was told, more or less prevalent. Either at my first or last visit (I cannot now recollect which), two slaves were lying near us, on board of which the disease was committing dreadful ravages, and during the stay above-mentioned, the hospital of the *Misericordia* had one large ward, at least, filled with patients affected by it. This hospital several of the officers visited. The men were not permitted to go ashore, except the crews of one or two boats—in all, probably, twenty-five in number.

Twenty-eight days after leaving Rio (Aug. 26), one of the midshipmen, who had been upon the station for some months, was seized with a pain in the head, then attributed to rheumatism, to which he had been subject. The accompanying fever was slight, and seemed to yield readily to saline purgatives, with small doses of ipecac. Sore throat. A few vesicles made their appearance upon the third day, but trifling in size, conical in shape, and containing watery fluid, drying away, forming no scab, and leaving no cicatrix. Discharged Sept. 2.

Mr. I., sleeping in the same steerage with the last, came upon the list also upon the 26th of August. Considerable fever, flushed face, deeply reddened tongue, bad taste in mouth, foetid breath, nausea. R. Sub. mur. hydrargyri gr. x.; Ol. Ricin. $\frac{3}{4}$ j. 27th. The excitement much the same. R. Sal. Epsom, $\frac{3}{4}$ ss.; Magnes. ust. $\frac{3}{4}$ ss. 28th. No fever. Eruption appearing, small in size and conical in shape, and containing purulent fluid. Upon the 5th day of his being on the list, sore throat but no fever. 7th day. Eruption disappearing. Many of later pimples did not come to maturity, but were mere vesicles, and dried away without scabbing. But two very trifling cicatrices were formed. He was discharged Sept. 14, having been kept upon the list for several days merely as a preventive against the effects of inclement weather.

The same day that Mr. I. was discharged, Mr. H., of the same steerage, was taken with very similar symptoms, highly flushed face, excited pulse, foetid breath, furred tongue, nausea and vomiting. R. Rhei. gr. x.; Sub. mur. Hydrargyri, gr. viij.; Syrup Sarsaparilla, $\frac{3}{4}$ jss. M. Sept. 15. Fever less, but much headache, and continued nausea. No operation. R. Rhei et Magnesia, aa. gr. xx. 16th. Fever less, feels better, eruption appearing. Bowels but slightly moved, repeat Rhei et Magnesia. 17th. Fever and gastric irritability gone, eruption well developed, exactly resembling the last case, both in its appearance and in the period it required for its various stages. These three had been vaccinated.

On the same day with the last (Sept. 14th), A. C., a marine, was attacked with the same symptoms, except that there was much more dryness of skin. R. Sub. mur. Hydrargyri, gr. xij.; Ipecac, gr. xx.; Tart. Antim. et Potassa, gr. ij. M. 15th. Free from fever. R. Salts and Magnesia. 6, P. M. Return of fever, headache, very dirty tongue, pulse very full and hard. V. S., with much relief. 16th. Pulse much softer, and all symptoms ameliorated. From his face being already plentifully covered with small pustules, the first appearance of the eruption was not noted, but during the following four days it broke out very profusely, and on the 20th it presented large flattened pustules, very numerous, and in many places on the legs confluent to the extent of four and five square inches. The development was gradual, and the pimples that appeared last were much smaller than the first, more conical, and did not pit in the centre, but gradually dried away without scabbing. Treatment, lemonade and cranberries. 23d. Scabbing commenced. 26th. Scabs

falling off. Oct. 2. Left his bed. Discharged Oct. 13. The eruption left many very evident cicatrices, particularly where it had been confluent. *He had never been vaccinated.*

Oct. 1. W. K., landsman, had a slight fever, headache, nausea. R. Ipecac, gr. xx.; Sul. Cupri, gr. x. M. Vomited freely. 2d. No fever, slight pain in back, supposed rheumatic. R. Comp. decoct. of Quassia and Guaiac. freely. 3d. Felt well. 4th. Discharged at request. 6th. Returned with general malaise. No fever. Many small vesicles appearing on face. 7th. Debility increased. Eruption in different stages, very profuse. Lemonade. 8th. New pustules appearing, others disappearing. The majority large, with depressions in the centre, and confluent only in three or four places, and merely to the extent of two or three pustules. The eruption dried at different periods, the last pustules being abortive, as in the other cases. Discharged 12th. But few marks were left, only I believe where the irritation was increased by picking. He had been vaccinated.

E. M., admitted Oct. 2. Symptoms much as in the previous case. R. Salts and Magnesia. 3d. Tongue still coated, breath foetid, skin moist and hot, discharges frequent, pulse small and frequent. R. Sub. mur. Hydrargyri, gr. xx.; Tart. Antim. et. Potas. gr. ij.; Opii. gr. ij. M. et divid. in chart No. 4, one every four hours. Arrow-root. 4th. Skin good, tongue still dirty. R. Salts and Magnesia. 5th. Bowels well moved, no fever, pulse feeble, anorexia. 6th. Eruption appearing in small vesicles. It differed from the last in the vesicles being more conical, smaller, and no where confluent. Discharged Oct. 13. Had been vaccinated.

H. T., negro, admitted Oct. 13. (Had been subject to frequent attacks of high rheumatic fever.) Fever, foul tongue, pains in head and back. R. Ipecac, gr. xxx.; Sulp. Cupri, gr. x. M. et divid. in chart No. 3, to be given at 15 minutes interval. 14th. Increase of pain, tongue still foul, cough and pain in chest. R. Salts and Magnesia, blister to chest. 15th. No fever, continuance of pain and of foulness of tongue. Free action from yesterday's prescription. R. Siedlitz Powder. 16th. All symptoms abated. Some doubtful appearance of vesicles. 17th. Vesicles conical, seldom exceeding 3-16 of an inch in diameter, well developed and plentiful, but not confluent in a single instance. R. Lemonade. 22d. Eruption drying. Detained on list some days longer with a headache. Had been vaccinated.

E. H. had been on the list for some time with chronic dysentery, from which he was recovering, when after three or four days headache, the eruption broke out upon the same day that the last was admitted. The eruption was not confluent, and resembled the last very much. No treatment. This man had been in the sick bay all along with the preceding. He had been vaccinated.

J. M. had been on the list for some time with an irritable ulcer, and had been all along in the practice of coming into the bay twice a day to have his ulcer dressed. After symptoms similar to those of the above, the eruption appeared in large flattened pustules, confluent in many places to a great extent, but not appearing simultaneously, there being visible at the same time some in every stage. 24. Eruption at its height. 25. Sore throat. Much irritation of skin, particularly in neighborhood of ulcer. R. More generous diet. Nov. 1. Eruption drying rapidly. 5th. Well washed; some discolorations left, but no pitting. Had never been vaccinated.

Besides these, there were fifty other cases which it would be unnecessary to detail at length. The three last given, may be taken as the average type of the other fifty, with the following exceptions.

F. McQ. had been on shore at the garrison town of Columbo, island of Ceylon, where he had a severe debauch. Three days after, he was seized with symptoms similar to those recorded above, but exceedingly violent. The eruption appeared on the sixth day, and simultaneously on all parts of the body. The pustules were large, depressed in the centre, and confluent. There was much tumefaction of the face. The mucous lining of the mouth and fauces was studded with pustules as far as could be seen. By the twelfth day of the disease, scabbing had proceeded, accompanied with much secondary fever. Death took place on the fourteenth day of the disease (Dec. 16), the immediate cause being suffocation from the pustules in the air-passages. No record as to whether he had been vaccinated.

Now here I must note the apparent discrepancy with my statement that the evidence as to there being but one contagion, is indubitable. He had been on shore, it is true, but it was at a garrisoned town, or rather a mere fortress entirely under military discipline, and where the medical police, in particular, I am assured, from excellent opportunities of informing myself, is very perfect. Particular inquiries were made by our fleet surgeon, Dr. Jno. Haslett, whether any eruptive disease was prevailing, and he was assured that

nothing of the kind had been known there, and had any variolous disease existed, even to a single case (not a probable condition), it must necessarily have been known to the medical director.

Five days after the death of the last, N. T., a healthy, temperate negro, was seized with the usual premonitory symptoms, which were not very severe. The eruption of large flattened confluent pustules was very profuse, appearing and coming to maturity in a short space of time. With the eruption was much tumefaction of the face. This man died of the severe secondary fever, which set in during the scabbing (Jan. 5, 1839), fifteen days from the commencement of the attack. He had not been vaccinated, or at least no proof could be obtained that he had been.

W. G. was seized with the usual symptoms. They yielded soon, and he was discharged from the part of the ship reserved for those attacked with the variolous disease. After his discharge, he discovered several conical vesicles which he showed me, and which resembled those in the second case mentioned. He was remanded to the part of the deck screened off, until the vesicles should dry away, which they did in a few days. Whilst he was thus confined, the only other inmates of the infected screen were two who had been attacked about the same time. Of these, W. V. had the premonitory symptoms very severely. The eruption was tardy in making its appearance when compared with others of similar violence. The pustules were large, flattened, very numerous, confluent to a very slight extent. The progress of the disease was marked by nothing peculiar. Convalescence was very tedious from two causes, great debility, though previously a very strong hale man, and excessive irritability of the eyes, one of which had been attacked by a pustule. This man was very much pitted by the disease. There was no evidence of his having been properly vaccinated. The other inmate of the screen was H. L., a young man of good health, but naturally of slender make and but slight bodily strength. The premonitory symptoms presented nothing remarkable. The eruption was very much as in the last case, profuse, slightly confluent, and attended with much tumefaction. The scabbing made considerable progress, but the secondary fever set in, his powers of life began to fail, and he succumbed, in a typhoid state, on the twelfth day (Jan. 14) of the attack. He had the mark of cowpock upon his arm.

* From this time the disease decreased in numbers and violence, with one exception to the latter. I. M., æt. 21, a pale, delicate

looking lad, had been confined to his cot for a month with a debility which seemed unaccounted for. During the last two weeks he had complained of pain in his groin and hip-joint, and three days before the eruption appeared, he had rigors and hectic—his system in the mean while apparently sinking rapidly. On Jan. 25, a miliary eruption appeared around his left eye. The next day I was myself taken with the disease, which precluded personal observation, but being very much interested in the individual, and in the case, I was constant and particular in my inquiries. The eruption was ushered in by no other symptoms than those just mentioned. It was profuse, confluent in many places, with much tumefaction. The scabbing was attended with severe secondary fever; on the second day this was accompanied by subsultus tendinum, and apparently dissolution was at hand. The next day a change had taken place for the better, and his convalescence, though slow, was uninterrupted. Many of the scabs did not drop off until the third week. The proofs of vaccination were too uncertain to place any reliance in them. I may notice a singular fact in this case, viz., that the lad, who had before the attack been delicate even to effeminacy, and who had seemed to be sinking under some slow and obscure disease, after his recovery was so seamed and pitted as to lose all trace of his former appearance, and became one of the stoutest and heartiest men in the ship.

As I have above incidentally mentioned, I was attacked by the disease myself after it had been on board the ship just five months, during which time I had been almost hourly among the infected. The premonitory symptoms were severe, the eruption appeared upon the sixth day, coming out at successive periods, the last vesicles being abortive. The scabs had almost entirely fallen upon the twelfth day, and but few cicatrices were left.

After this there were but three more cases, two of the simple *conical vesicular* form—the other in a gentleman now a lieutenant in the navy. He had nursed the young midshipman mentioned in the third case, with the most unremitting care—scarce leaving his bedside day or night. Then he escaped. Five months after, whilst I was confined behind a screen, he looked in but once and only for a moment. Two weeks after he was attacked, and had the disease to about the same degree with myself. I mention this merely incidentally—not as a clear case of direct contagion. No new cases occurred after March 1st, 1839.

It will be seen that the disease prevailed a little more than six

months—during which period the ship visited the following ports: Muscat, Oct. 17th, 1838—Bombay, Nov. 1st—Goa, Nov. 14th—Columbo, Nov. 24th—Coast of Sumatra, Dec. 21st—Pulo Penang, Jan. 25th, 1839—Singapore, Feb. 3d.

At none of these places, after the most diligent inquiries, could we hear of any variolous disease prevailing; and our means for obtaining information upon this point were very ample, both from the constituted authorities, and from personal acquaintances among the faculty, many of whom came to visit our patients. At all these ports the ship lay more than a mile, and at many, more than two miles from the shore, and the men were not permitted to visit the shore, except the gig's crew, of whom F. M'Q. was the only one attacked.

Then the question comes, What was the disease? In the three first cases, in that of W. G. and in the two last, marking the commencement, the middle and the end of the period of six months, the disease was entirely vesicular, and answered to all the symptoms given as those of chickenpox. The remainder of the cases, with the exception of the three fatal ones, and those of W. V. and I. M., correspond to the descriptions given of varioloid, in the irregularity of the phases and the slightness after the symptoms of the first day or two. The five exceptions are the only cases in which it appears to me there can be a doubt as to the name of the disease. Were they merely cases of aggravated varioloid, or of genuine smallpox? If of the former, what are the characteristic distinctions of the latter? All of those laid down by the most approved authors seem to have been present—the suddenness, the violence of the attack, the simultaneous appearance of pustules in all parts of the body not in successive crops, the accompanying tumefaction, and the secondary fever.

I repeat that the above observations were made without the slightest bias of my mind towards a belief in the identity of the three diseases; indeed, on looking to the opinions expressed in the works which I then had with me, I find they are decidedly opposed to any such belief.

It appeared to me that the late prevalence of variolous disease in Boston made this a favorable time for putting forth these remarks, which I do in hopes that others of more extended opportunities of observation might be induced to contribute something to the consideration of the question which heads this paper.

ART. V.—*The Contagiousness of Puerperal Fever.* Read before the Boston Society for Medical Improvement, by OLIVER W. HOLMES, M.D., and published by request of the Society.

IN collecting, enforcing and adding to the evidence accumulated upon this most serious subject, I would not be understood to imply that there exists a doubt in the mind of any well-informed member of the medical profession as to the fact that puerperal fever is sometimes communicated from one person to another, both directly and indirectly. In the present state of our knowledge upon this point I should consider such doubts merely as a proof that the sceptic had either not examined the evidence, or, having examined it, refused to accept its plain and unavoidable consequences. I should be sorry to think with Dr. Rigby, that it was a case of "oblique vision;" I should be unwilling to force home the *argumentum ad hominem* of Dr. Blundell, but I would not consent to make a *question* of a momentous fact, which is no longer to be considered as a subject for trivial discussions, but to be acted upon with silent promptitude. It signifies nothing that wise and experienced practitioners have sometimes doubted the reality of the danger in question; no man has the right to doubt it any longer. No negative facts, no opposing opinions, be they what they may or whose they may, can form any answer to the series of cases now within the reach of all who choose to explore the records of medical science.

If there are some who conceive that any important end would be answered by recording such opinions, or by collecting the history of all the cases they could find in which no evidence of the influence of contagion existed, I believe they are in error. Suppose a few writers of authority can be found to profess a disbelief in contagion—and they are very few compared with those who think differently—is it quite clear that they formed their opinions on a view of all the facts, or is it not apparent that they relied mostly on their own solitary experience? Still further, of those whose names are quoted, is it not true that scarcely a single one could by any possibility have known the half or the tenth of the facts bearing on the subject which have reached such a frightful amount within the last few years? Again, as to the utility of negative facts, as we may briefly call them,—instances, namely, in which exposure has not been followed by disease,—although, like other truths, they may be worth knowing, I do not

see that they are like to shed any important light upon the subject before us. Every such instance requires a good deal of circumstantial explanation before it can be accepted. It is not enough that a practitioner should have had a single case of puerperal fever not followed by others. It must be known whether he attended others while this case was in progress, whether he went directly from one chamber to others, whether he took any, and what precautions. It is important to know that several women were exposed to infection derived from the patient, so that allowance may be made for want of predisposition. Now if of negative facts so sifted there could be accumulated a hundred for every one plain instance of communication here recorded, I trust it need not be said that we are bound to guard and watch over the hundredth tenant of our fold, though the ninety and nine may be sure of escaping the wolf at its entrance. If any one is disposed, then, to take a hundred instances of lives endangered or sacrificed out of those I have mentioned, and make it reasonably clear that within a similar time and compass *ten thousand* escaped the same exposure, I shall thank him for his industry, but I must be permitted to hold to my own practical conclusions, and beg him to adopt or at least to examine them also. Children that walk in calico before open fires are not always burned to death; the instances to the contrary may be worth recording; but by no means if they are to be used as arguments against woollen frocks and high fenders.

I am not sure that this paper will escape another remark which it might be wished were founded in justice. It may be said that the facts are too generally known and acknowledged to require any formal argument or exposition, that there is nothing new in the positions advanced, and no need of laying additional statements before the profession. But on turning to two works, one almost universally, and the other extensively appealed to as authority in this country, I see ample reason to overlook this objection. In the last edition of Dewees's *Treatise on the Diseases of Females*, it is expressly said, "In this country, under no circumstance that puerperal fever has appeared hitherto, does it afford the slightest ground for the belief that it is contagious." In the "*Philadelphia Practice of Midwifery*" not one word can be found in the chapter devoted to this disease, which would lead the reader to suspect that the idea of contagion had ever been entertained. It seems proper, therefore, to remind those who are in the habit of referring to these works for guidance, that there may possibly be some sources of danger they have slight-

ed or omitted, quite as important as a trifling irregularity of diet, or a confined state of the bowels, and that whatever confidence a physician may have in his own mode of treatment, his services are of questionable value whenever he carries the bane as well as the antidote about his person.

The practical point to be illustrated is the following: *The disease known as Puerperal Fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses.*

Let me begin by throwing out certain incidental questions, which without being absolutely essential, would render the subject more complicated, and by making such concessions and assumptions as may be fairly supposed to be without the pale of discussion.

1. It is granted that all the forms of what is called puerperal fever may not be, and probably are not, equally contagious or infectious. I do not enter into the distinctions that have been drawn by authors, because the facts do not appear to me sufficient to establish any absolute line of demarcation between such forms as may be propagated by contagion, and those which are never so propagated. This general result I shall only support by the authority of Dr. Ramsbotham, who gives as the result of his experience, that the same symptoms belong to what he calls the infectious and the sporadic forms of the disease, and the opinion of Armstrong in his original essay. If others can show any such distinction, I leave it to them to do it. But there are cases enough that show the prevalence of the disease among the patients of a single practitioner when the disease was in no degree epidemic, in the proper sense of the term. I may refer to those of Mr. Robertson and of Dr. Pearson, hereafter to be cited, as examples.

2. I shall not enter into any dispute about the particular *mode* of infection, whether it be by the atmosphere the physician carries about him into the sick chamber, or by the direct application of the virus to the absorbing surfaces with which his hand comes in contact. Many facts and opinions are in favor of each of these modes of transmission. But it is obvious that in the majority of cases it must be impossible to decide by which of these channels the disease is conveyed, from the nature of the intercourse between the physician and the patient.

3. It is not pretended that the contagion of puerperal fever must always be followed by the disease. It is true of all contagious diseases that they frequently spare those who appear to be fully submitted to their influence. Even the vaccine virus, fresh from the

subject, fails every day to produce its legitimate effect, though every precaution is taken to ensure its action. This is still more remarkably the case with scarlet fever and some other diseases.

4. It is granted that the disease may be produced and variously modified by many causes besides contagion, and more especially by epidemic and endemic influences. But this is not peculiar to the disease in question. There is no doubt that smallpox is propagated to a great extent by contagion, yet it goes through the same periods of periodical increase and diminution which have been remarked in puerperal fever. If the question is asked how we are to reconcile the great variations in the mortality of puerperal fever in different seasons and places with the supposition of contagion, I will answer it by another question from Mr. Farr's letter to the Registrar-General. He makes the statement that "*five* die weekly of smallpox in the metropolis when the disease is not epidemic"—and adds, "The problem for solution is,—Why do the 5 deaths become 10, 15, 20, 31, 58, 88 weekly, and then progressively fall through the same measured steps?"

5. I take it for granted that if it can be shown that great numbers of lives have been and are sacrificed to ignorance or blindness on this point, no other error of which physicians or nurses may be occasionally suspected will be alleged in palliation of this; but that whenever and wherever they can be shown to carry disease and death instead of health and safety, the common instincts of humanity will silence every attempt to explain away their responsibility.

The treatise of Dr. Gordon, of Aberdeen, was published in the year 1795, being among the earlier special works upon the disease. A part of his testimony has been occasionally copied into other works, but his expressions are so clear, his experience is given with such manly distinctness and disinterested honesty, that it may be quoted as a model which might have been often followed with advantage.

"This disease seized such women only as were visited, or delivered, by a practitioner, or taken care of by a nurse, who had previously attended patients affected with the disease."

"I had evident proofs of its infectious nature, and that the infection was as readily communicated as that of the small-pox or measles, and operated more speedily than any other infection with which I am acquainted."

"I had evident proofs that every person who had been with a pa-

tient in the puerperal fever became charged with an atmosphere of infection, which was communicated to every pregnant woman who happened to come within its sphere. 'This is not an assertion, but a fact, admitting of demonstration, as may be seen by a perusal of the foregoing table,'—referring to a table of seventy-seven cases, in many of which the channel of propagation was evident.

He adds, "It is a disagreeable declaration for me to mention, that I myself was the means of carrying the infection to a great number of women." He then enumerates a number of instances in which the disease was conveyed by midwives and others to the neighboring villages, and declares that "These facts fully prove, that the cause of the puerperal fever, of which I treat, was a specific contagion, or infection, altogether unconnected with a noxious constitution of the atmosphere."

But his most terrible evidence is given in these words, "I ARRIVED AT THAT CERTAINTY IN THE MATTER, THAT I COULD VENTURE TO FORETELL WHAT WOMAN WOULD BE AFFECTED WITH THE DISEASE, UPON HEARING BY WHAT MIDWIFE THEY WERE TO BE DELIVERED, OR BY WHAT NURSE THEY WERE TO BE ATTENDED, DURING THEIR LYING IN: AND, ALMOST IN EVERY INSTANCE, MY PREDICTION WAS VERIFIED."

Even previously to Gordon, Mr. White of Manchester had said, "I am acquainted with two gentlemen in another town, where the whole business of midwifery is divided betwixt them, and it is very remarkable that one of them loses several patients every year of the puerperal fever, and the other never so much as meets with the disorder"—a difference which he seems to attribute to their various modes of treatment.*

Dr. Armstrong has given a number of instances in his *Essay on Puerperal Fever*, of the prevalence of the disease among the patients of a single practitioner. At Sunderland, "in all, forty-three cases occurred from the first of January to the first of October, when the disease ceased; and of this number forty were witnessed by Mr. Gregson and his assistant Mr. Gregory, the remainder having been separately seen by three accoucheurs." There is appended to the London edition of this essay, a letter from Mr. Gregson, in which that gentleman says, in reference to the great number of cases occurring in his practice, "The cause of this I cannot pretend fully to explain, but I should be wanting in common liberality if I were to

* On the Management of Lying-in Women, p. 120.

make any hesitation in asserting, that the disease which appeared in my practice was highly contagious, and communicable from one puerperal woman to another." "It is customary among the lower and middle ranks of people to make frequent personal visits to puerperal women resident in the same neighborhood, and I have ample evidence for affirming that the infection of the disease was often carried about in that manner; and, however painful to my feelings, I must in candor declare, that it is very probable the contagion was conveyed, in some instances, by myself, though I took every possible care to prevent such a thing from happening, the moment that I ascertained that the distemper was infectious." Dr. Armstrong goes on to mention six other instances within his knowledge, in which the disease had at different times and places been limited, in the same singular manner, to the practice of individuals, while it existed scarcely if at all among the patients of others around them. Two of the gentlemen became so convinced of their conveying the contagion that they withdrew for a time from practice.

I find a brief notice, in an American Journal, of another series of cases, first mentioned by Mr. Davies, in the Medical Repository. This gentleman stated his conviction that the disease is contagious.

"In the autumn of 1822, he met with twelve cases, while his medical friends in the neighborhood did not meet with any, 'or at least very few.' He could attribute this circumstance to no other cause than his having been present at the examination, after death, of two cases, sometime previous, and of his having imparted the disease to his patients, notwithstanding every precaution." *

Dr. Gooch says, "It is not uncommon for the greater number of cases to occur in the practice of one man, whilst the other practitioners of the neighborhood, who are not more skilful or more busy, meet with few or none. A practitioner opened the body of a woman who had died of puerperal fever, and continued to wear the same clothes. A lady whom he delivered a few days afterwards was attacked with and died of a similar disease; two more of his lying-in patients, in rapid succession, met with the same fate; struck by the thought, that he might have carried contagion in his clothes, he instantly changed them, and met with no more cases of the kind.† A woman in the country, who was employed as washerwoman and

* Philad. Med. Journal for 1825, p. 408.

† A similar anecdote is related by Sir Benjamin Brodie, of the late Dr. John Clarke. *Lancet*, May 2, 1840.

nurse, washed the linen of one who had died of puerperal fever; the next lying-in patient she nursed, died of the same disease; a third nursed by her met with the same fate, till the neighborhood getting afraid of her, ceased to employ her.”*

In the winter of the year 1824 “Several instances occurred of its prevalence among the patients of particular practitioners, whilst others who were equally busy met with few or none. One instance of this kind was very remarkable. A general practitioner, in large midwifery practice, lost so many patients from puerperal fever, that he determined to deliver no more for some time, but that his partner should attend in his place. This plan was pursued for one month, during which not a case of the disease occurred in their practice. The elder practitioner being then sufficiently recovered, returned to his practice, but the first patient he attended was attacked by the disease and died. A physician, who met him in consultation soon afterwards, about a case of a different kind, and who knew nothing of his misfortune, asked him whether puerperal fever was at all prevalent in his neighborhood, on which he burst into tears, and related the above circumstances.

“Among the cases which I saw this season in consultation, four occurred in one month in the practice of one medical man, and all of them terminated fatally.”†

Dr. Ramsbotham asserted, in a lecture at the London Hospital, that he had known the disease spread through a particular district, or be confined to the practice of a particular person, almost every patient being attacked with it, while others had not a single case. It seemed capable, he thought, of conveyance, not only by common modes, but through the dress of the attendants upon the patient.‡

In a letter to be found in the London Medical Gazette for Jan., 1840, Mr. Robertson, of Manchester, makes the statement which I here give in a somewhat condensed form.

A midwife delivered a woman on the 4th of December, 1830, who died soon after with the symptoms of puerperal fever. In one month from this date the same midwife delivered thirty women, residing in different parts of an extensive suburb, of which number sixteen caught the disease and all died. These were the only cases which had occurred for a considerable time in Manchester. The other

* An Account of some of the most important Diseases peculiar to Women, p. 4. † *Ib.* p. 71.

‡ *Lond. Med. Gaz.* May 2, 1835.

midwives connected with the same charitable institution as the woman already mentioned, are twenty-five in number, and deliver, on an average, ninety women a week, or about three hundred and eighty a month. None of these women had a case of puerperal fever. "Yet all this time this woman was crossing the other midwives in every direction, scores of the patients of the charity being delivered by them in the very same quarters where her cases of fever were happening."

Mr. Robertson remarks, that little more than half the women she delivered during this month took the fever; that on some days all escaped, on others only one or more out of three or four; a circumstance similar to what is seen in other infectious maladies.

Dr. Blundell says, "Those who have never made the experiment, can have but a faint conception how difficult it is to obtain the exact truth respecting any occurrence in which feelings and interests are concerned. Omitting particulars, then, I content myself with remarking, generally, that from more than one district I have received accounts of the prevalence of puerperal fever in the practice of some individuals, while its occurrence in that of others, in the same neighborhood, was not observed. Some, as I have been told, have lost ten, twelve, or a greater number of patients, in scarcely broken succession; like their evil genius, the puerperal fever has seemed to stalk behind them wherever they went. Some have deemed it prudent to retire for a time from practice. In fine, that this fever may occur spontaneously, I admit; that its infectious nature may be plausibly disputed, I do not deny; but I add, considerably, that in my own family, I had rather that those I esteemed the most should be delivered, unaided, in a stable, by the manger-side, than that they should receive the best help, in the fairest apartment, but exposed to the vapors of this pitiless disease. Gossiping friends, wet nurses, monthly nurses, the practitioner himself, these are the channels by which, as I suspect, the infection is principally conveyed." *

At a meeting of the Royal Medical and Chirurgical Society, Dr. King mentioned that some years since a practitioner at Woolwich lost sixteen patients from puerperal fever in the same year. He was compelled to give up practice for one or two years, his business being divided among the neighboring practitioners. No case of puerperal fever occurred afterwards, neither had any of the neighboring surgeons any cases of this disease.

* Lect. on Midwifery, p. 395.

At the same meeting Mr. Hutchinson mentioned the occurrence of three consecutive cases of puerperal fever, followed subsequently by two others, all in the practice of one accoucheur.*

Dr. Lee makes the following statement. "In the last two weeks of September, 1827, five fatal cases of uterine inflammation came under our observation. All the individuals so attacked had been attended in labor by the same midwife, and no example of a febrile or inflammatory disease of a serious nature occurred during that period among the other patients of the Westminster General Dispensary, who had been attended by the other midwives belonging to that institution." †

The recurrence of long series of cases like those I have cited, reported by those most interested to disbelieve in contagion, scattered along through an interval of half a century, might have been thought sufficient to satisfy the minds of all inquirers that here was something more than a singular coincidence. But if on a more extended observation, it should be found that the same ominous groups of cases, clustering about individual practitioners, were observed in a remote country, at different times, and in widely separated regions, it would seem incredible that any should be found too prejudiced or indolent to accept the solemn truth knelled into their ears by the funeral bells from both sides of the ocean—the plain conclusion that the physician and the disease entered, hand in hand, into the chamber of the unsuspecting patient.

That such series of cases have been observed in this country, and in this neighborhood, I proceed to show.

In Dr. Francis's Notes to Denman's Midwifery, a passage is cited from Dr. Hosack, in which he refers to certain puerperal cases which proved fatal to several lying-in women, and in some of which the disease was supposed to be conveyed by the accoucheurs themselves.‡

A writer in the N. Y. Medical and Physical Journal for October, 1829, in speaking of the occurrence of puerperal fever, confined to one man's practice, remarks, "We have known cases of this kind occur, though rarely, in New York."

I mention these little hints about the occurrence of such cases, partly because they are the first I have met with in American medical literature, but more especially because they serve to remind us that behind the fearful array of published facts, there lies a dark list

* *Lancet*, May 2, 1840.

† *Lond. Cyc. of Pract. Med.*, Art. *Fever, Puerperal*.

‡ *Denman's Midwifery*, p. 675, 3d Am. Ed.

of similar events, unwritten in the records of science, but long remembered by many a desolated fireside.

Certainly nothing can be more open and explicit than the account given by Dr. Peirson, of Salem, of the cases seen by him. In the first nineteen days of January, 1829, he had five consecutive cases of puerperal fever, every patient he attended being attacked, and the three first cases proving fatal. In March, of the same year, he had two moderate cases; in June, another case, and in July, another, which proved fatal. "Up to this period," he remarks, "I am not informed that a single case had occurred in the practice of any other physician. Since that period I have had no fatal case in my practice, although I have had several dangerous cases. I have attended in all twenty cases of this disease, of which four have been fatal. I am not aware that there has been any other case in the town of distinct puerperal peritonitis, although I am willing to admit my information may be very defective on this point. I have been told of some "mixed cases," and "morbid affections after delivery." *

In the Quarterly Summary of the Transactions of the College of Physicians of Philadelphia,† may be found some most extraordinary developments respecting a series of cases occurring in the practice of a member of that body.

Dr. Condie called the attention of the Society to the prevalence at the present time, of puerperal fever of a peculiarly insidious and malignant character. "In the practice of one gentleman extensively engaged as an obstetrician, nearly every female he has attended in confinement, during several weeks past, within the above limits," (the southern sections and neighboring districts) "had been attacked by the fever."

"An important query presents itself, the Doctor observed, in reference to the particular form of fever now prevalent. Is it, namely, capable of being propagated by contagion, and is a physician who has been in attendance upon a case of the disease, warranted in continuing, without interruption, his practice as an obstetrician? Dr. C., although not a believer in the contagious character of many of those affections generally supposed to be propagated in this manner, has nevertheless become convinced by the facts that have fallen under his notice, that the puerperal fever now prevailing, is capable of being communicated by contagion. How otherwise can be explained the very curious circumstance of the disease in one district being ex-

* Remarks on Puerperal Fever, pp. 12 and 13.

† For May, June, and July, 1842.

clusively confined to the practice of a single physician, a Fellow of this College, extensively engaged in obstetrical practice—while no instance of the disease has occurred in the patients under the care of any other accoucheur practising within the same district ; scarcely a female that has been delivered for weeks past has escaped an attack ? ”

Dr. Rutter, the practitioner referred to, “ observed that after the occurrence of a number of cases of the disease in his practice, he had left the city and remained absent for a week, but on returning, no article of clothing he then wore having been used by him before, one of the very first cases of parturition he attended was followed by an attack of the fever, and terminated fatally ; he cannot, readily, therefore, believe in the transmission of the disease from female to female, in the person or clothes of the physician.”

The meeting at which these remarks were made was held on the third of May, 1842. In a letter dated December 20, 1842, addressed to Dr. Meigs, and to be found in the *Medical Examiner*,* he speaks of “ those horrible cases of puerperal fever, some of which you did me the favor to see with me during the past summer,” and talks of his experience in the disease, “ now numbering nearly 70 cases, all of which have occurred within less than a twelvemonth past.”

And Dr. Meigs asserts, on the same page, “ Indeed, I believe that his practice in that department of the profession, was greater than that of any other gentlemen, which was probably the cause of his seeing a greater number of the cases.” This from a professor of midwifery, who some time ago assured a gentleman whom he met in consultation, that the night on which they met was the eighteenth in succession that he himself had been summoned from his repose,† seems hardly satisfactory.

I must call the attention of the inquirer most particularly to the Quarterly Report above referred to, and the letters of Dr. Meigs and Dr. Rutter, to be found in the *Medical Examiner*. Whatever impression they may produce upon his mind, I trust they will at least convince him that there is some reason for looking into this apparently uninviting subject.

At the meeting of the College of Physicians just mentioned, Dr. Warrington stated that a few days after assisting at an autopsy of puerperal peritonitis, in which he laded out the contents of the abdominal cavity with his hands, he was called upon to deliver three

* For Jan. 21, 1843.† *Med. Examiner* for Dec. 10, 1842.

women in rapid succession. All of these women were attacked with different forms of what is commonly called puerperal fever. Soon after these he saw two other patients, both on the same day, with the same disease. Of these five patients two died.

At the same meeting, Dr. West mentioned a fact related to him by Dr. Samuel Jackson, of Northumberland. Seven females, delivered by Dr. Jackson in rapid succession, while practising in Northumberland county, were all attacked with puerperal fever, and five of them died. "Women," he said, "who had expected me to attend upon them, now becoming alarmed, removed out of my reach, and others sent for a physician residing several miles distant. These women, as well as those attended by midwives, all did well; nor did we hear of any deaths in childbed within a radius of fifty miles, excepting two, and these I afterwards ascertained to have been caused by other diseases." He underwent, as he thought, a thorough purification, and still his next patient was attacked with the disease and died. He was led to suspect that the contagion might have been carried in the gloves which he had worn in attendance upon the previous cases. Two months or more after this he had two other cases. He could find nothing to account for these, unless it were the instruments for giving enemata which had been used in two of the former cases, and were employed by these patients. When the first case occurred, he was attending and dressing a limb extensively mortified from erysipelas, and went immediately to the accouchement with his clothes and gloves most thoroughly imbued with its effluvia. And here I may mention, that this very Dr. Samuel Jackson, of Northumberland, is one of Dr. Dewees's authorities against contagion.

The three following statements are now for the first time given to the public. All of the cases referred to occurred within this State, and two of the three series in Boston and its immediate vicinity.

I. The first is a series of cases which took place during the last spring in a town at some distance from this neighborhood. A physician of that town, Dr. C., had the following consecutive cases.

No. 1, delivered March 20, died March 24.

2, " April 9, " April 14.

3, " 10, " " 14.

4, " 11, " " 18.

5, " 27, " May 3.

6, " 28, Had some symptoms, recovered.

7, " May 8, Had some symptoms, also recovered.

These were the only cases attended by this physician during the period referred to. "They were all attended by him until their termination, with the exception of the patient No. 6, who fell into the hands of another physician on the 2d of May. (Dr. C. left town for a few days at this time.) Dr. C. attended cases immediately before and after the above-named periods, none of which, however, presented any peculiar symptoms of the disease."

About the first of July, he attended another patient in a neighboring village, who died two or three days after delivery.

The first patient, it is stated, was delivered on the 20th of March. "On the 19th, Dr. C. made the autopsy of a man who died suddenly, sick only 48 hours; had œdema of the thigh, and gangrene extending from a little above the ankle into the cavity of the abdomen." Dr. C. wounded himself, very slightly, in the right hand during the autopsy. The hand was quite painful the night following, during his attendance on the patient No. 1. He did not see this patient after the 20th, being confined to the house, and very sick from the wound just mentioned, from this time until the third of April.

Several cases of erysipelas occurred in the house where the autopsy mentioned above took place, soon after the examination. There were also many cases of erysipelas in town at the time of the fatal puerperal cases which have been mentioned.

The nurse who laid out the body of the patient No. 3, was taken on the evening of the same day with sore throat and erysipelas, and died in ten days from the first attack.

The nurse who laid out the body of the patient No. 4, was taken on the day following with symptoms like those of this patient, and died in a week, without any external marks of erysipelas.

"No other cases of similar character with those of Dr. C. occurred in the practice of any of the physicians in the town or vicinity at the time. Deaths following confinement have occurred in the practice of other physicians during the past year, but they were not cases of puerperal fever. No post-mortem examinations were held in any of these puerperal cases."

Some additional statements in this letter are deserving of insertion.

"A physician attended a woman in the immediate neighborhood of the cases numbered 2, 3 and 4. This patient was confined the morning of March 1st, and died on the night of March 7th. It is doubtful whether this should be considered a case of puerperal fever. She had suffered from canker, indigestion and diarrhœa for a year previous to her delivery. Her complaints were much aggravated for

two or three months previous to delivery ; she had become greatly emaciated, and weakened to such an extent, that it had not been expected that she would long survive her confinement, if indeed she reached that period. Her labor was easy enough ; she flowed a good deal, seemed exceedingly prostrated, had ringing in the ears, and other symptoms of exhaustion ; the pulse was quick and small. On the second and third day there was some tenderness and tumefaction of the abdomen, which increased somewhat on the fourth and fifth. He had cases in midwifery before and after this, which presented nothing peculiar."

It is also mentioned in the same letter, that another physician had a case which happened last summer and another last fall, both of which recovered.

Another gentleman reports a case last December, a second case five weeks and another three weeks since. All these recovered. A case also occurred very recently in the practice of a physician in the village where the eighth patient of Dr. C. resides, which proved fatal. "This patient had some patches of erysipelas on the legs and arms. The same physician has delivered three cases since, which have all done well. There have been no other cases in this town or its vicinity recently. There have been some few cases of erysipelas." It deserves notice that the partner of Dr. C., who attended the autopsy of the man above-mentioned and took an active part in it ; who also suffered very slightly from a prick under the thumb nail received during the examination, had twelve cases of midwifery between March 26th and April 12th, all of which did well, and presented no peculiar symptoms. It should also be stated, that during these 17 days he was in attendance on all the cases of erysipelas in the house where the autopsy had been performed.

I owe these facts to the prompt kindness of a gentleman whose intelligence and character are sufficient guaranty for their accuracy.

The two following letters were addressed to my friend Dr. Storer, by the gentlemen in whose practice the cases of puerperal fever occurred. His name renders it unnecessary to refer more particularly to these gentlemen, who on their part have manifested the most perfect freedom and courtesy in affording these accounts of their painful experience.

JAN. 28, 1843.

II. ***** "The time to which you allude was in 1830. The first case was in February, during a very cold time. She was confined

the 4th and died the 12th. Between the 10th and 28th of this month, I attended six women in labor, all of whom did well except the last, as also two who were confined March 1st and 5th. Mrs. E., confined Feb. 28th, sickened, and died March 8th. The next day, 9th, I inspected the body, and the night after attended a lady, Mrs. B., who sickened, and died 16th. The 10th, I attended another, Mrs. G., who sickened, but recovered. March 16th, I went from Mrs. G.'s room to attend a Mrs. H., who sickened, and died 21st. The 17th, I inspected Mrs. B. On 19th, I went directly from Mrs. H.'s room to attend another lady, Mrs. G., who also sickened, and died 22d. While Mrs. B. was sick, on 15th, I went directly from her room a few rods, and attended another woman, who was not sick. Up to 20th of this month I wore the same clothes. I now refused to attend any labor, and did not till April 21st, when having thoroughly cleansed myself, I resumed my practice, and had no more puerperal fever.

“The cases were not confined to a narrow space. The two nearest were half a mile from each other, and half that distance from my residence. The others were from two to three miles apart, and nearly that distance from my residence. There were no other cases in their immediate vicinity which came to my knowledge. The general health of all the women, was pretty good, and all the labors as good as common except the first. This woman, in consequence of my not arriving in season, and the child being half born some time before I arrived, was very much exposed to the cold at the time of confinement, and afterwards, being confined in a very open cold room. Of the six cases you perceive only one recovered.

“In the winter of 1817 two of my patients had puerperal fever, one very badly, the other not so badly. Both recovered. One other had swelled leg, or phlegmasia dolens, and one or two others did not recover as well as usual.

“In the summer of 1835 another disastrous period occurred in my practice. July 1st, I attended a lady in labor, who was afterwards quite ill and feverish; but at the time I did not consider her case a decided puerperal fever. On 8th, I attended one who did well. On 12th, one who was seriously sick. This was also an equivocal case, apparently arising from constipation and irritation of the rectum. These women were ten miles apart and five from my residence. On 15th and 20th, two who did well. On 25th, I attended another. This was a severe labor, and followed by unequivocal puerperal

fever, or peritonitis. She recovered. August 2d and 3d, in about twenty-four hours I attended four persons. Two of them did very well; one was attacked with some of the common symptoms, which however subsided in a day or two, and the other had decided puerperal fever, but recovered. This woman resided five miles from me. Up to this time I wore the same coat. All my other clothes had frequently been changed. On 6th, I attended two women, one of whom was not sick at all; but the other, Mrs. L., was afterwards taken ill. On 10th, I attended a lady, who did very well. I had previously changed all my clothes, and had no garment on which had been in a puerperal room. On 12th, I was called to Mrs. S., in labor. While she was ill, I left her to visit Mrs. L., one of the ladies who was confined on 6th. Mrs. L. had been more unwell than usual, but I had not considered her case any thing more than common till this visit. I had on a surtout at this visit, which on my return to Mrs. S., I left in another room. Mrs. S. was delivered on 13th with forceps. These women both died of decided puerperal fever.

“While I attended these women in their fevers, I changed my clothes, and washed my hands in a solution of chloride of lime after each visit. I attended seven women in labor during this period, all of whom recovered without sickness.

“In my practice I have had several single cases of puerperal fever, some of whom have died and some have recovered. Until the year 1830, I had no suspicion that the disease could be communicated from one patient to another by a nurse or midwife; but I now think the foregoing facts strongly favor that idea. I was so much convinced of this fact, that I adopted the plan before related.

“I believe my own health was as good as usual at each of the above periods. I have no recollection to the contrary.

“I believe I have answered all your questions. I have been more particular on some points perhaps than necessary; but I thought you could form your own opinion better than to take mine. In 1830, I wrote to Dr. Channing a more particular statement of my cases. If I have not answered your questions sufficiently, perhaps Dr. C. may have my letter to him, and you can find your answer there.” *

* In a letter to myself, this gentleman also stated, “I do not recollect that there was any erysipelas or any other disease particularly prevalent at the time.”

BOSTON, FEB. 3, 1843.

III. "MY DEAR SIR,—I received a note from you last evening, requesting me to answer certain questions therein proposed, touching the cases of puerperal fever which came under my observation the past summer. It gives me pleasure to comply with your request, so far as it is in my power so to do, but owing to the hurry in preparing for a journey, the notes of the cases I had then taken, were lost or mislaid. The principal *facts*, however, are too vivid upon my recollection to be soon forgotten. I think, therefore, that I shall be able to give you all the information you may require.

"All the cases that occurred in my practice, took place between the 7th of May and the 17th of June, 1842.

"They were not confined to any particular part of the city. The two first cases were patients residing at the south-end, the next was at the extreme north-end, one living in Sea street and the other in Roxbury. The following is the order in which they occurred.

"Case 1. Mrs. ——— was confined on the 7th of May, at 5 o'clock, P. M., after a natural labor of six hours. At 12 o'clock at night, on the 9th (thirty-one hours after confinement), she was taken with severe chill, previous to which she was as comfortable as women usually are under the circumstances. She died on the 10th.

"Case 2. Mrs. ——— was confined on the 10th of June (four weeks after Mrs. C.), at 11, A. M., after a natural, but somewhat severe labor of 5 hours. At 7 o'clock, on the morning of the 11th, she had a chill. Died on the 12th.

"Case 3. Mrs. ———, confined on the 14th of June, was comfortable until the 18th, when symptoms of puerperal fever were manifest. She died on the 20th.

"Case 4. Mrs. ———, confined June 17th, at 5 o'clock, A. M., was doing well until the morning of the 19th. She died on the evening of the 21st.

"Case 5. Mrs. ——— was confined with her *fifth* child on the 17th of June, at 6 o'clock in the evening. This patient had been attacked with puerperal fever, at three of her previous confinements, but the disease yielded to depletion and other remedies without difficulty. This time, I regret to say, I was not so fortunate. She was not attacked, as were the other patients, with a chill, but complained of extreme pain in abdomen, and tenderness on pressure, almost from the moment of her confinement. In this, as in the other cases, the disease resisted all remedies, and she died in great distress

on the 22d of the same month. Owing to the extreme heat of the season, and my own indisposition, none of the subjects were examined after death. Dr. Channing, who was in attendance with me on the three last cases, proposed to have a post-mortem examination of the subject of case No. 5, but from some cause which I do not now recollect, it was not obtained.

“ You wish to know whether I wore the same clothes when attending the different cases. I cannot positively say, but I should think I did not, as the weather became warmer after the first two cases; I therefore think it probable that I made a change of at least a *part* of my dress. I have had no other case of puerperal fever in my own practice for three years, save those above related, and I do not remember to have lost a patient before with this disease. While absent, last July, I visited two patients sick with puerperal fever, with a friend of mine in the country. Both of them recovered.

“ The cases that I have recorded, were not confined to any particular constitution or temperament, but it seized upon the strong and the weak, the old and the young—one being over 40 years, and youngest under 18 years of age.***** If the disease is of an erysipelatous nature, as many suppose, contagionists may perhaps find some ground for their belief in the fact that for two weeks previous to my first case of puerperal fever, I had been attending a severe case of erysipelas, and the infection may have been conveyed through me to the patient; but on the other hand, why is not this the case with other physicians, or with the same physician at all times, for since my return from the country I have had a more inveterate case of erysipelas than ever before, and no difficulty whatever has attended any of my midwifery cases.”

I am assured, on unquestionable authority, that “ About three years since, a gentleman in extensive midwifery business, in a neighboring State, lost in the course of a few weeks eight patients in child-bed, seven of them being undoubted cases of puerperal fever. No other physician of the town lost a single patient of this disease during the same period.” And from what I have heard in conversation with some of our most experienced practitioners, I am inclined to think many cases of the kind might be brought to light by extensive inquiry.

This long catalogue of melancholy histories assumes a still darker aspect when we remember how kindly nature deals with the par-

turient female, when she is not immersed in the virulent atmosphere of an impure lying-in hospital, or poisoned in her chamber by the unsuspected breath of contagion. From all causes together, not more than four deaths in a thousand births and miscarriages, happened in England and Wales during the period embraced by the first Report of the Registrar-General.* In the second Report the mortality was shown to be about five in one thousand.† In the Dublin Lying-in Hospital, during the seven years of Dr. Collins's mastership, there was one case of puerperal fever to 178 deliveries, or less than six to the thousand, and one death from this disease in 273 cases, or between three and four to the thousand.‡ Yet during this period the disease was endemic in the hospital, and might have gone on to rival the horrors of the pestilence of the Maternité, had not the poison been destroyed by a thorough purification.

In private practice, leaving out of view the cases that are to be ascribed to the self-acting system of propagation, it would seem that the disease must be far from common. Mr. White, of Manchester, says, "Out of the whole number of lying-in patients whom I have delivered (and I may safely call it a great one), I have never lost one, nor to the best of my recollection has one been greatly endangered, by the puerperal, miliary, low nervous, putrid malignant, or milk fever." § Dr. Joseph Clarke informed Dr. Collins, that in the course of *forty-five* years' most extensive practice, he lost but *four* patients from this disease. || One of the most eminent practitioners of Glasgow, who has been engaged in very extensive practice for upwards of a quarter of a century, testifies that he never saw more than twelve cases of real puerperal fever. ¶

I have myself been told by two gentlemen practising in this city, and having for many years a large midwifery business, that they had neither of them lost a patient from this disease, and by one of them that he had only seen it in consultation with other physicians. In five hundred cases of midwifery of which Dr. Storer has given an abstract in the first number of this Journal, there was only one instance of fatal puerperal peritonitis.

In the view of these facts, it does appear a singular coincidence, that one man or woman should have ten, twenty, thirty, or seventy cases of this rare disease, following their footsteps with the keenness

* 1st Report, p. 105. † 2d Report, p. 73. ‡ Collins's Midwifery, p. 228, etc. § Op. cit. p. 115. || Collins's Treatise on Midwifery, p. 228. ¶ Lancet, May 4, 1833.

of a beagle, through the streets and lanes of a crowded city, while the scores that cross the same paths on the same errands know it only by name. It is a series of similar coincidences that has led us to consider the dagger, the musket, and certain innocent looking white powders, as having some little claim to be regarded as dangerous. It is the practical inattention to similar coincidences that has given rise to the unpleasant but often necessary documents called *indictments*, that has sharpened a form of the cephalotome sometimes employed in the case of adults, and adjusted that modification of the fillet which delivers the world of those who happen to be too much in the way while such striking coincidences are taking place.

I shall now mention a few instances in which the disease appears to have been conveyed by the process of direct inoculation.

Dr. Campbell, of Edinburgh, states that in October, 1821, he assisted at the post-mortem examination of a patient who died with puerperal fever. He carried the pelvic viscera in his pocket to the class room. The same evening he attended a woman in labor without previously changing his clothes; this patient died. The next morning he delivered a woman with the forceps; she died also, and of many others who were seized with the disease within a few weeks, three shared the same fate in succession.

In June, 1823, he assisted some of his pupils at the autopsy of a case of puerperal fever. He was unable to wash his hands with proper care, for want of the necessary accommodations. On getting home he found two patients required his assistance. He went without further ablution, or changing his clothes; both these patients died with puerperal fever.* This same Dr. Campbell is one of Dr. Churchill's authorities against contagion.

Mr. Robertson says that in one instance within his knowledge, a practitioner passed the catheter for a patient with puerperal fever late in the evening; the same night he attended a lady who had the symptoms of the disease on the second day. In another instance a surgeon was called while in the act of inspecting the body of a woman who had died of this fever, to attend a labor; within forty-eight hours this patient was seized with the fever.†

On the 16th of March, 1831, a medical practitioner examined the body of a woman who had died a few days after delivery, from puerperal peritonitis. On the evening of the 17th he delivered a patient who was seized with puerperal fever on the 19th, and died on the

* London Med. Gaz. Dec. 10th, 1831.

† Ibid. for Jan. 1832.

24th. Between this period and the 6th of April, the same practitioner attended two other patients, both of whom were attacked with the same disease and died.*

In the autumn of 1829, a physician was present at the examination of a case of puerperal fever, dissected out the organs, and assisted in sewing up the body. He had scarcely reached home when he was summoned to attend a young lady in labor. In sixteen hours she was attacked with the symptoms of puerperal fever, and narrowly escaped with her life.†

In December, 1830, a midwife who had attended two fatal cases of puerperal fever at the British Lying-in Hospital, examined a patient who had just been admitted, to ascertain if labor had commenced. This patient remained two days in the expectation that labor would come on, when she returned home and was then suddenly taken in labor, and delivered before she could set out for the hospital. She went on favorably for two days, and was then taken with puerperal fever and died in thirty-six hours.‡

“A young practitioner, contrary to advice, examined the body of a patient who had died from puerperal fever; there was no epidemic at the time; the case appeared to be purely sporadic. He delivered three other women shortly afterwards; they all died with puerperal fever, the symptoms of which broke out very soon after labor. The patients of his colleague did well, except one, where he assisted to remove some coagula from the uterus; she was attacked in the same manner as those whom he had attended, and died also.” The writer in the British and Foreign Medical Review, from whom I quote this statement—and who is no other than Dr. Rigby—adds, “we trust that this fact alone will forever silence such doubts, and stamp the well-merited epithet of ‘criminal,’ as above quoted, upon such attempts.”§

From the cases given by Mr. Ingleby, I select the following. Two gentlemen, after having been engaged in conducting the post-mortem examination of a case of puerperal fever, went in the same dress, each respectively, to a case of midwifery. “The one patient was seized with the rigor about thirty hours afterwards. The other patient was seized with a rigor the third morning after delivery. *One recovered, one died.*”|| One of these same gentlemen attended another woman

* London Cyc. of Pract. Med., Art. Fever, Puerperal.

† Ibid.

‡ Ibid.

§ Brit. and For. Medical Review, for Jan. 1842, p. 112.

|| Edin. Med. and Surg. Journal, April, 1838.

in the same clothes two days after the autopsy referred to. "The rigor did not take place until the evening of the fifth day from the first visit. *Result fatal.*" These cases belonged to a series of seven, the first of which was thought to have originated in a case of erysipelas. "Several cases of a mild character followed the foregoing seven, and their nature being now most unequivocal, my friend declined visiting all midwifery cases for a time; and there was no recurrence of the disease." These cases occurred in 1833. Five of them proved fatal. Mr. Ingleby gives another series of seven cases which occurred to a practitioner in 1836, the first of which was also attributed to his having opened several erysipelatous abscesses a short time previously.

I need not refer to the case lately read before this Society, in which a physician went, soon after performing an autopsy of a case of puerperal fever, to a woman in labor, who was seized with the same disease and perished. The forfeit of that error has been already paid.

At the meeting of the Medical and Chirurgical Society before referred to, Dr. Merriman related an instance occurring in his own practice, which excites a reasonable suspicion that two lives were sacrificed to a still less dangerous experiment. He was at the examination of a case of puerperal fever at 2 o'clock in the afternoon. *He took care not to touch the body.* At 9 o'clock the same evening he attended a woman in labor; she was so nearly delivered that he had scarcely any thing to do. The next morning she had severe rigors, and in 48 hours was a corpse. Her infant had erysipelas and died in two days.*

In connection with the facts which have been stated, it seems proper to allude to the dangerous and often fatal effects which have followed from wounds received in the post-mortem examination of patients who have died of puerperal fever. The fact that such wounds are attended with peculiar risk has been long noticed. I find that Chaussier was in the habit of cautioning his students against the danger to which they were exposed in these dissections.† The head *pharmacien* of the Hotel Dieu, in his analysis of the fluid effused in puerperal peritonitis, says that practitioners are convinced of its deleterious qualities, and that it is very dangerous to apply it to the denuded skin.‡ Sir Benjamin Brodie speaks of it as being well

* Lancet, May 2d, 1840.

† Stein, l'Art de Accoucher, 1794. Dict. des Sciences Medicales, Art. Puerperal.

‡ Journal de Pharmacie, Jan. 1836.

known that the inoculation of lymph or pus from the peritoneum of a puerperal patient is often attended with dangerous and even fatal symptoms. Three cases in confirmation of this statement, two of them fatal, have been reported to this Society within a few months.

Of about fifty cases of injuries of this kind, of various degrees of severity, which I have collected from different sources, at least twelve were instances of infection from puerperal peritonitis. Some of the others are so stated as to render it probable that they may have been of the same nature. Five other cases were of peritoneal inflammation; three in males. Three were of what was called enteritis, in one instance complicated with erysipelas; but it is well known that this term has been often used to signify inflammation of the peritoneum covering the intestines. On the other hand, no case of typhus or typhoid fever is mentioned as giving rise to dangerous consequences, with the exception of the single instance of an undertaker mentioned by Mr. Travers, who seems to have been poisoned by a fluid which exuded from the body. The other accidents were produced by dissection, or some other mode of contact with bodies of patients who had died of various affections. They also differed much in severity, the cases of puerperal origin being among the most formidable and fatal. Now a moment's reflection will show that the number of cases of serious consequences ensuing from the dissection of the bodies of those who have perished of puerperal fever, is so vastly disproportioned to the relatively small number of autopsies made in this complaint as compared with typhus, or pneumonia, (from which last disease not one case of poisoning happened), and still more from all diseases put together, that the conclusion is irresistible that a most fearful morbid poison is often generated in the course of this disease. Whether or not it is *sui generis*, confined to this disease, or produced in some others, as for instance erysipelas, I need not stop to inquire.

In connection with this may be taken the following statement of Dr. Rigby. "That the discharges from a patient under puerperal fever are in the highest degree contagious, we have abundant evidence in the history of lying-in hospitals. The puerperal abscesses are also contagious, and may be communicated to healthy lying-in women by washing with the same sponge; this fact has been repeatedly proved in the Vienna Hospital; but they are equally communicable to women not pregnant; on more than one occasion the women engaged in washing the soiled bed-linen of the General Lying-in Hospital

have been attacked with abscess in the fingers or hands, attended with rapidly spreading inflammation of the cellular tissue.”*

Now add to all this the undisputed fact that within the walls of lying-in hospitals there is often generated a miasm, palpable as the chlorine used to destroy it, tenacious so as in some cases almost to defy extirpation, deadly in some institutions as the plague; which has killed women in a private hospital of London so fast that they were buried two in one coffin to conceal its horrors; which enabled Tonellé to record two hundred and twenty-two autopsies at the *Maternité* of Paris; which has led Dr. Lee to express his deliberate conviction that the loss of life occasioned by these institutions completely defeats the object of their founders; and out of this train of cumulative evidence, the multiplied groups of cases clustering about individuals, the deadly results of autopsies, the inoculation by fluids from the living patient, the murderous poison of hospitals, does there not result a conclusion that laughs all sophistry to scorn, and renders all argument an insult?

I have had occasion to mention some instances in which there was an apparent relation between puerperal fever and erysipelas. The length to which this paper has extended does not allow me to enter into the consideration of this most important subject. I will only say that the evidence appears to me altogether satisfactory that some most fatal series of puerperal fever have been produced by an infection originating in the matter or effluvia of erysipelas. In evidence of some connection between the two diseases, I need not go back to the older authors, as Pouteau or Gordon, but will content myself with giving the following references, with their dates; from which it will be seen that the testimony has been constantly coming before the profession for the last few years.

London Cyclopedia of Practical Medicine—article Puerperal Fever. 1833.

Mr. Ceeley's Account of the Puerperal Fever at Aylesbury. *Lancet*, 1835.

Dr. Ramsbotham's Lecture. *London Medical Gazette*, 1835.

Mr. Yates Ackerley's Letter in the same Journal, 1838.

Mr. Ingleby on Epidemic Puerperal Fever. *Edinburgh Medical and Surgical Journal*, 1838.

Mr. Paley's Letter. *London Medical Gazette*, 1839.

* *System of Midwifery*, p. 292.

Remarks at the Medical and Chirurgical Society. *Lancet*, 1840.
Dr. Rigby's System of Midwifery. 1841.

Nunneley on Erysipelas—a work which contains a large number of references on the subject. 1841.

British and Foreign Quarterly Review, 1842.

Dr. S. Jackson, of Northumberland, as already quoted from the Summary of the College of Physicians, 1842.

And lastly, a startling series of cases by Mr. Storrs, of Doncaster, to be found in the American Journal of the Medical Sciences for January, 1843.

The relation of puerperal fever with other continued fevers, would seem to be remote and rarely obvious. Hey refers to two cases of synochus occurring in the Royal Infirmary of Edinburgh, in women who had attended upon puerperal patients. Dr. Collins refers to several instances in which puerperal fever has appeared to originate from a continued proximity to patients suffering with typhus.*

Such occurrences as those just mentioned, though most important to be remembered and guarded against, hardly attract our notice in the midst of the gloomy facts by which they are surrounded. Of these facts, at the risk of fatiguing repetitions, I have summoned a sufficient number, as I believe, to convince the most incredulous, that every attempt to disguise the truth which underlies them all, is useless.

It is true that some of the historians of the disease, especially Hulme, Hull and Leake, in England; Tonellé, Dugès and Baudelocque, in France, profess not to have found puerperal fever contagious. At the most they give us mere negative facts, worthless against an extent of evidence which now overlaps the widest range of doubt, and doubles upon itself in the redundancy of superfluous demonstration. Examined in detail, this and much of the show of testimony brought up to stare the daylight of conviction out of countenance, proves to be in a great measure unmeaning or inapplicable, as might be easily shown were it necessary. Nor do I feel the necessity of enforcing the conclusion which arises spontaneously from the facts which have been enumerated, by formally citing the opinions of those grave authorities who have for the last half century been sounding the unwelcome truth it has cost so many lives to establish.

“It is to the British practitioner,” says Dr. Rigby, “that we are

* Treatise on Midwifery, p. 223.

indebted for strongly insisting upon this important and dangerous character of puerperal fever.”*

The names of Gordon, John Clarke, Denman, Burns, Young,† Hamilton,‡ Haighton,\$ Good,|| Waller,¶ Blundell, Gooch, Ramsbotham, Douglas,** Lee, Ingleby, Locock,†† Abercrombie,‡‡ Alison,\$\$ Traverser,||| Rigby, and Watson,¶¶ many of whose writings I have already referred to, may have some influence with those who prefer the weight of authorities to the simple deductions of their own reason from the facts laid before them. A few continental writers have adopted similar conclusions.*** It gives me pleasure to remember that while the doctrine has been unceremoniously discredited in one of the leading Journals,††† and made very light of by teachers in two of the principal Medical Schools of this country, Dr. Channing has for many years inculcated and enforced by examples the danger to be apprehended and the precautions to be taken in the disease under consideration.

I have no wish to express any harsh feeling with regard to the painful subject that has come before us. If there are any so far excited by the story of these dreadful events, that they ask for some word of indignant remonstrance, to show that science does not turn the hearts of its followers into ice or stone, let me remind them that such words have been uttered by those who speak with an authority I could not claim.††† It is as a lesson rather than as a reproach that I call up the memory of these irreparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused; they have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it with less cruelty the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the streets has pity upon her

* British and Foreign Med. Review for Jan. 1842. † Encyc. Britannica, xiii, 467, Art. Medicine. ‡ Outlines of Midwifery, p. 109. § Oral Lectures, &c. || Study of Medicine, ii. 195. ¶ Medical and Physical Journal, July, 1830. ** Dublin Hosp. Reports for 1822. †† Library of Pract. Medicine, i. 373. ‡‡ Researches on Diseases of the Stomach, &c. p. 181. \$\$ Lib. of Pract. Medicine, Vol. i. p. 96. ||| Further Researches on Constitutional Irritation, p. 128. ¶¶ Lond. Med. Gaz. Feb. 1842.

*** See British and Foreign Medical Review; Vol. iii. p. 525, and Vol. iv. p. 517. Also Ed. Med. and Surg. Journal for July, 1824, and American Journal of Med. Sciences for Jan. 1841.

††† Phil. Med. Journ. Vol. xii. p. 364.

††† Dr. Blundell and Dr. Rigby in the works already cited.

sister in degradation when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly !

There may be some among those whom I address, who are disposed to ask the question, What course are we to follow in relation to this matter ? The facts are before them, and the answer must be left to their own judgment and conscience. If any should care to know my own conclusions, they are the following ; and in taking the liberty to state them very freely and broadly, I would ask the inquirer to examine them as freely in the light of the evidence which has been laid before him.

1. A physician holding himself in readiness to attend cases of midwifery, should never take any active part in the post-mortem examination of cases of puerperal fever.

2. If a physician is present at such autopsies, he should use thorough ablution, change every article of dress, and allow twenty-four hours or more to elapse before attending to any case of midwifery. It may be well to extend the same caution to cases of simple peritonitis.

3. Similar precautions should be taken after the autopsy or surgical treatment of cases of erysipelas, if the physician is obliged to unite such offices with his obstetrical duties, which is in the highest degree inexpedient.

4. On the occurrence of a single case of puerperal fever in his practice, the physician is bound to consider the next female he attends in labor, unless some weeks, at least, have elapsed, as in danger of being infected by him, and it is his duty to take every precaution to diminish her risk of disease and death.

5. If within a short period two cases of puerperal fever happen close to each other, in the practice of the same physician, the disease not existing or prevailing in the neighborhood, he would do wisely to relinquish his obstetrical practice for at least one month, and endeavor to free himself by every available means from any noxious influence he may carry about with him.

6. The occurrence of three or more closely connected cases, in the practice of one individual, no others existing in the neighborhood, and no other sufficient cause being alleged for the coincidence, is *prima facie* evidence that he is the vehicle of contagion.

7. It is the duty of the physician to take every precaution that the disease shall not be introduced by nurses or other assistants, by making proper inquiries concerning them, and giving timely warning of every suspected source of danger.

8. Whatever indulgence may be granted to those who have heretofore been the ignorant causes of so much misery, the time has come when the existence of a *private pestilence* in the sphere of a single physician should be looked upon not as a misfortune but a crime; and in the knowledge of such occurrences, the duties of the practitioner to his profession, should give way to his paramount obligations to society.

ART. VI.—*Aneurism of the Aorta—fatal.*

THE following cases of aneurism of the aorta we have received from Dr. J. C. DALTON, of Lowell, with the request that we would give them a place in our Journal.

1st. Robert Patterson, carpet weaver, aged about 45, had complained for several months to his friends of pain in the cardiac region, dyspnœa on motion, &c. Eat a very hearty breakfast on the morning of the 12th January, 1837, went into the mill to a room in the 3d story, and while in the act of throwing off his great coat, fell back, gave one shriek, and gasping, immediately expired.

Autopsy.—On denuding the body, the chest was found unduly arched over cardiac region, and the sound on percussion dull for a space of 8 inches square, extending considerably to the right of the median line. Emaciation. On raising sternum, extensive and firm adhesions of the pleuræ of both lungs to each other and to the diaphragm—both lungs pushed to their respective sides by the distended pericardium, which was filled to its utmost with a fluid. This, with the enclosed heart, the aortal arch, and trachea, we removed from the chest. On opening the pericardium, a large quantity of serum flowed out, leaving the heart completely enveloped in a clot, like a mould. On removing this clot, or mould, we found the heart enor-

mously enlarged, and very firm, owing to great hypertrophy of the left ventricle; the diameter of the aorta to beyond the arch very much increased. On slitting open the aorta, the whole internal surface exhibited marks of old disease, being rough, and covered extensively with patches of lymph, varying in size from a pin's head to the finger nail. About one inch above the aortal valves, there was a deep ulceration of the serous and muscular coats; about two inches above, and one inch below the going off of the *arteria innominata*, an ulceration about the size of a sixpence had perforated the walls of the aorta, by which the blood was injected into the cavity of the pericardium, the cause of the patient's instantaneous death, by embracing the heart as with the gripe of a vice. Between the *innominata* and the carotid of the other side, precisely against the trachea, the walls of which it had nearly reached, there was another ulceration, somewhat larger than the one already described, and which must soon, if the previous one had not already anticipated this result, have inevitably opened into the trachea, by which event the patient's life would have been terminated by the ejection of torrents of blood from the mouth.

In the above detailed case there was no formation of an aneurismal sac, as there would have been had the ulceration been higher up the arch of the aorta. The external or cellular coat being more extensible than the others, and which in this case was wanting, from the anatomical peculiarity of the parts where the ulceration obtained, viz., the origin of the aorta. Here the aorta, being strengthened, says Bertin (*Chauncy's translation*, p. 134), by a fold of the pericardium, is deprived of the cellular coat, consequently the destruction of the coats at this point is followed by a perforation and epanchement (pouring out) of blood into the pericardium, and the formation of an aneurismal sac does not occur.

The pericardium ascends on the great vessels as high as the commencement of the arch of the aorta, and opposite to the second ribs.

A case analogous to the foregoing, in the principal characteristics, will be found detailed in Bertin (*Chauncy's translation*, p. 57), on which the author remarks: "This very interesting case presents us with a morbid lesion of which the records of medicine contain but few examples. It is seldom we have an opportunity of observing perforative ulcerations of the aorta opening into the pericardium; nevertheless we find some facts of this kind in Morgagni, &c." (*Bertin, Chauncy's translation*, p. 60.)

2d. *Aneurism of the Aorta, fatal, during the progress of Phthisis Pulmonalis.*

The subject of the present case, a married female, aged about 45 years, was received into the Lowell Almshouse, under the care of Dr. C. P. Coffin. Had an attack of inflammatory disease of the chest, six weeks previously, in Maine; does not know what.

Symptoms, on entrance, as follows. Dry and sharp cough. Dyspnœa. Can lie equally well on either side. Slight hectic, with burning palms and feet. Pulse accelerated. Progressive emaciation. Dull sound over left thorax, from top to bottom, before and behind. Sonorous every where on right, except at the root of the lung. Diseased side smaller by an inch, by accurate admeasurement, than the right. Vesicular murmur inaudible on left, puerile on right.

She was put upon alterative doses of Submuriate, Ipecac and Opium, with perpetual vesication; under which treatment a gradual amendment seemed to be taking place, when on —, in the midst of lively conversation, there suddenly issued from her mouth a torrent of blood, followed by instant death.

Autopsy.—On raising the sternum, numerous bands of false membrane were seen passing from the left lung to the pleura, while behind the adhesion was entire. A pint and a half of serum, intermingled with shreds of organized lymph, with which the surface of the lung was covered, were removed from the pleural cavity.

Lungs. Left carnified and tuberculous, containing several cavities, particularly at its apex. The right parietes over fourth, fifth, and sixth ribs, particularly prominent, and the corresponding lung which occupied this space did not collapse in the least, but appeared emphysematous, was red and injected.

Heart and pericardium healthy externally, in the last more than the healthy amount of serum. A large sac, of the size of a lemon, and of irregular shape, commencing an inch below the subclavian, arose from the aorta, the posterior wall of which rested upon the spine, the periosteum of which was denuded and absorbed, leaving the surface rough. This sac had broken into the left bronchus.

The emphysematous state of the right lung, and the fact of the parietes being tied down by the bands above mentioned, account for the anomalous appearances which confused, in some measure, the diagnosis.

ART. VII. *Cases illustrating the Diagnosis of Acute Diseases of the Heart in Children.* Read before the Boston Society for Medical Improvement, by JOHN WARE, M.D.

It may appear scarcely worth while to some, at the present day, when we are able, by physical signs, to recognize so exactly the character of diseases within the chest, to offer cases whose object is to illustrate their diagnosis merely by their general course and history. I conceive that it will not, however, be useless, for two reasons. In the first place, the examination of children, especially of infants, in order to the very minute determination of physical signs, is one of considerable difficulty, particularly where the heart is concerned; and I think it would not be easy for any one, unless he have had very extensive opportunities for observing cardiac diseases in patients of this class, to satisfy himself of their existence by physical signs alone. Besides this, the difficulties in the way of a very perfect acquaintance with the mode of detecting disease by physical signs, are such—at least as a large portion of practitioners in this country are and will be educated—that probably a majority of them must for the present depend mainly upon rational signs in their diagnosis of disease. Every thing, therefore, which will render more exact our knowledge of the rational signs, is worthy of record. There is also, perhaps, some danger—from the greater satisfaction which there is in the detection of disease by physical signs, from the greater certainty which this method presents to those who are well acquainted with it, and from the fact, also, that writers on diseases are generally those who have possessed themselves of this kind of knowledge—that the study of the other means of diagnosis may be somewhat slighted and undervalued.

It should be observed that these cases were not very minutely recorded, and that I give therefore only a brief and general description of their most characteristic symptoms. It should also be observed, that the two first occurred before I was sufficiently accustomed to the practice of auscultation to allow me to place any considerable reliance on the results derived from it.

The first case occurred in a nursing infant of 8 months. She was moderately affected by measles, in the second week of April, 1832, went well through with its ordinary course, and ceased in a few days to be an object of attention, although, other children being sick in the family with the same disease, I was a daily visiter.

April 23, I was again asked to look at her, and found her with considerable cough, a rapid pulse, quite palé, but very quiet and sleepy, presenting, as I supposed, no very urgent symptoms. She became, however, from day to day, very rapidly worse, and on the

26th, Her aspect was very bad. The countenance and lips were then very pale; she had a remarkably heavy look, especially about the eyes; she took no notice, or but very little; there was much apparent distress in breathing; each expiration was accompanied by a lengthened groan, but there was not much heaving of the chest. Pressure on the abdomen increased the dyspnœa. The pulse were 160. Respirations 48.

28th. The same symptoms had continued and increased in intensity. The countenance was pale and cold, the lips livid; the hands were cool, smooth, and had a dark, almost blackish tinge. There was much short hacking cough, which seemed to annoy her a good deal; and the respiration was accompanied by the same groaning sound. The pulse continued very rapid, but was so feeble as not to be easily counted.

30th. Had had some intervals of ease, with return of heat, looser cough, and diminution of lividity. Essentially the same symptoms had continued, and to-day she sunk rapidly, and died at 4, P. M., just a week from the day on which the attention of her parents was first called to this attack.

The most noticeable symptoms in this case were, a continued shrinking of the countenance, and a paleness of the countenance lips and hands, which gave place only to a degree of lividity; a muddy, heavy, unconscious appearance of the eyes; a total absence of flush or redness of the skin even during the few periods of general heat; a constant smallness, feebleness, with great frequency of the pulse; and more than all, an unmitigated distress of breathing throughout the disease, not accompanied by the violent efforts and heaving of the chest which often accompany dyspnœa, but marked by a kind of tranquillity and quietness of suffering, which gave to it a very different character.

On *dissection*, there was found in the right thorax, inflammation of the pleura, with effusion of lymph over its whole posterior surface, from the apex to the lower edge of the lower lobe. It was also extensively connected by recent lymph to the diaphragm, with some cavities containing thin pus. The substance of the lungs was also inflamed. In the left chest, the pleura was every where in the same

condition, with the exception of a small portion covering the upper lobe, near the sternum. Lymph in some parts was of the thickness of two or three lines. Pus was found in some small pleuritic cavities, and sero-purulent fluid in the common cavity. Lungs in a healthy state only in the small portion of the upper lobe, which was covered by sound pleura.

The cavity of the pericardium contained bloody serum. The pericardium was covered, like the pleura, with a layer of lymph.

CASE II. The subject of this case was a male, aged one year. He had suffered in the preceding winter from very severe pneumonitis; but his health had since been as good as usual. He had just recovered from chicken-pox when he was seized with the disease of which he died. The record of the details of the symptoms during life is very scanty, but it embraces the most important particulars. I was called to him June 8, 1832, and he died June 15. The peculiar symptoms were, the same great but quiet anguish of respiration, as that noted in the former case, but with more intervals of ease; the same remarkable and constant paleness of the lips and countenance, and an equal rapidity of pulse and respiration. The pulse varying from 160 to 176, and the respirations amounting sometimes to 84.

On *dissection*, there was found general consolidation of the lungs of the *right side*; the air penetrated no portion of them. In the upper lobe there were found a great number of small masses of lymph or concrete pus, plugging up the extreme divisions of the bronchi; the largest about the size of a common pea. The whole pleura was covered by a layer of lymph, with a quantity of serum in the cavity of the chest.

The lower lobe of the lungs of the *left side* was in the same condition, both as to its substance and the pleura, with those of the right side; but the upper lobe was in all respects in a perfectly healthy condition, and was the only portion of the organs into which air entered.

The heart was pale, and the pericardium universally covered with a layer of lymph.

CASE III. I was called, Nov. 30, 1836, at 4, A. M., to a male child, eight months old, of whose case I collected the following particulars. It had always been fat and healthy—had been warmly clothed, and in all respects well taken care of; had been weaned within the last fortnight. On the night of the 28th, was uneasy and refused food. All day yesterday (29th) he also refused food, had occasionally chilly

turns, with cold hands and feet, paleness of the face, and a cold sweat about the forehead. There was no cough, so far as the parents had noticed, and no difficulty of breathing. Indeed there were no symptoms which had created any alarm, or led them to believe that this was anything more than a slight indisposition from cold. Through the day he had at times noticed as usual, had been playful, and was bright and playful when he was put to bed in the evening.

In the course of the night he became much distressed, and his breathing was accompanied by groaning. At intervals, however, he fell away into a state of sleep or stupor, from which he was roused by the return of the distress. This became so urgent, that at four o'clock I was called to him. He was sitting quite erect in his mother's lap, heaving himself backward and forward in great agony. Each act of respiration was accompanied by a moan, cry, and sometimes indeed almost by a shriek. The sound of respiration was heard but very obscurely in any part of the chest. There was no pulse at the wrist, and I could not detect either the impulse or sounds of the heart by the ear. The countenance generally, but particularly the lips, were very pale. The eyes were open and looked around at times as if he might be conscious and take notice; for the most part, however, he did not seem capable of it. He died at seven o'clock, A. M., three hours from the time of my being called to him.

On *dissection*, the lungs were found perfectly healthy in all parts. There was about a drachm of serum in the pericardium. The heart was large—the vessels on its surface were very full of blood—there was an effusion of blood in patches beneath the serous membrane, in various parts, and at the base of the left ventricle a coagulum beneath this membrane as big as half a pea. In the same part there was a prominence resembling a papular eruption. The cavities and valves were natural. The right auricle very full of blood. The texture of the muscular portions of the organ was remarkably soft, and was very easily torn by the finger. It was also quite pale. There was about half an ounce of serum in the cavity of the peritoneum.

The most remarkable, and indeed the only striking morbid change in this last case, was the softness of the muscular texture of the heart. This was such as I have seen in only very few cases, and these were of unequivocal disease of the heart, being complicated with well-marked inflammation of the pericardium.

* CASE IV. was that of a female child, eleven months old, nursing, to which I was called March 26, 1838, when I found that it had la-

bored under severe symptoms for a week. Its history was that of a case of pneumonitis, and it presented, on examination, its usual physical signs—dulness and bronchial respiration in the lower two thirds of the right back. But it had presented a few other symptoms. The respiration had been and was much more difficult than usually attends an inflammation of the lungs of one side of no greater extent. It was accompanied for a considerable part of the time with a distressing groan or grunt. Early in the case there had been a great degree of sleepiness or stillness. The left side of the face, the left arm and hand, were very cold and mottled of a dark red or livid color, resembling the congested condition of the capillaries in a dying person. This had been their state, more or less, throughout the case. The pulse were 180, and the respirations 76. There was no dulness detected on percussion over the heart.

There was for several days some alleviation of the distress of breathing, a diminished frequency of the pulse and respiration, a return of warmth, and an improved circulation of the left side of the face, and on the 28th the pulse had fallen to 132 and the respiration to 52, with a corresponding mitigation of other symptoms. On the morning of the 29th, however, a great change had taken place. The pulse were at the rate of 180 in the minute, intermitting at every third beat, and were extremely feeble. The respirations were 60, with a constant groan, the face and lips were cold and congested, and the hands cold. Death took place at 10 P. M.

On *dissection*, there was found extensive hepatization of the lungs of the right side, with lymph on the pleura, and pus in the cavity of the chest. Congestion of the lower lobe of the lungs of the left side. Two ounces of fluid of a sero-purulent character were found in the pericardium, and the whole membrane was covered with coagulable lymph.

In comparing these cases, it is obvious to remark in the first place, that the great amount of disease in the two first prevents us from attributing the urgent symptoms and the fatality of them wholly to the pericarditis. An amount of similar disease on both sides of the chest, probably always proves fatal without any such complication. But the symptoms in these cases, in which they differed from common cases of very severe and even fatal pleuro-pneumonia, were the paleness of the face and lips, the smallness and feebleness of the pulse, as well as their great frequency, and the "mortal anguish" which accompanied and was produced by the breathing, although at the same

time the patient was comparatively still and tranquil. The same symptoms were also present in the third case; and though this was an affection of the heart of a different character from either of the former, still so far as these particular symptoms are concerned, this does not diminish the probability that they may be regarded as indicative of some affection of the heart which interferes with its function as a muscular organ, since this function is very likely to be impaired by a disease which attacks its surface only. I consider the fact, indeed, that the same symptoms have been thus found connected with different affections of the heart, in some cases with and in some without, concomitant disease of the lungs, as confirming the opinion that they are to be regarded as proceeding from the state of action of the heart.

The fourth case differed from the two first in the less amount of disease of the lungs, whilst its intensity in the pericardium was greater—or rather probably the condition of the lungs permitted life to continue longer, and thus the disease in the pericardium was suffered to run on to a later stage. In this case there was the same great frequency and feebleness of the pulse—the rapidity and anguish of respiration—with at the same time a stillness and tranquillity—but with quite a different state of the capillary circulation of the face, lips and hands. This state of the capillary circulation, however, although differing from that presented in the former cases, is also not less different from what we usually meet in simple pulmonary disease, and is therefore to be noted as one circumstance tending to illustrate the history of the class of cases to which it belongs.

ART. VIII.—*Operations for Fissure of the Soft and Hard Palate.*
(Palatoplastie.) By J. MASON WARREN, M.D.

ACCORDING to Malgaigne, the congenital fissures of the palate present themselves under three different forms. 1st. *In the simple state*, that is, where the soft palate is divided in the median line, without any loss of substance, and without any division of the palatine vault; under these circumstances, at the moment of deglutition, the two separated portions may be seen to come almost into perfect contact, by a muscular action which it is not very easy to explain.

Sometimes the division is confined to only a part of the soft palate, this always being the most inferior portion. 2d. *With a partial division of the hard palate*, whether the ossa palati are alone divided, or where it extends in part into the maxillary bones; in both these cases there is a simple fissure, terminated by an angle in front. 3d. *With a complete division of the bony palate*. In this case there is a greater or less separation of the two halves of the palatine vault, and almost always a double fissure of the lip, and of the alveolar processes.*

Having thus offered a description of the different forms under which the fissures of the palate may present themselves, we proceed to take a slight sketch of the operations which have been proposed for their relief. In 1828 M. Roux performed the operation of staphyloraphy, or suture of the soft palate, on a young medical student; the operation was followed by complete success, and by the restoration of voice to the patient. Roux was soon succeeded by Graeffe, of Germany, who has since contested the priority of the invention with the former surgeon, and by Dr. Warren, of Boston, who not having seen the method of Roux described, made use of instruments of his own invention. This most valuable discovery at once took a high rank in surgery, as being one of the most delicate to perform, and the most gratifying when successful of any of the operations in which life is not concerned, that the surgeon is called upon to practise. Thus far, however, the operation was alone limited to remedying fissures of the soft palate, rejecting by far the most numerous class of cases of this malformation, viz., those in which the jaws and hard palate are implicated. The following method, however, had been suggested by Roux, and more recently has been carried into practice by him, for operating on the soft palate where the above-named complications existed; this was to cut away the soft parts for the space of an inch on either side, from the arch of the palatine bones, stretch them across the fissure, and unite them by sutures, leaving the apertures which remained in the bones, in case union of the soft parts took place, to be covered by a metallic plate. It was in performing this operation that I was led to see the futility of attempting it excepting where the palatine bones were slightly separated, and which suggested to me certain modifications which I have since been fortunate enough to put into successful practice. This method which I propose to describe, if it does not always succeed in

* Malgaigne Med. Op.

completely closing the fissures of both the soft and hard palate, more frequently results in the closure of the former, than the one recommended by Roux, and in some cases entirely obliterates the whole extent of the aperture both in the bones and soft parts.

The form of operation which I have practised will be best illustrated by the relation of the first case in which it was put into execution.

The patient was a young man, 25 years old, with a congenital fissure of the soft and hard palate, the bones being separated quite up to the alveolar processes, with a deviation to the left side. On looking into the mouth, the whole posterior fauces were exposed, with the openings of the eustachian tubes and the bottom of the nasal cavity of the left side distinctly visible. The speech of the patient was rendered so indistinct, by this misfortune, that it was with the greatest difficulty that he could make himself understood. Deglutition had always been imperfectly performed, liquids, particularly, being swallowed with much difficulty, and often regurgitated through the nose. At the first glance the soft parts were scarcely perceptible, being almost concealed in the sides of the throat from the action of the muscles. On being seized by a forceps they could be partially drawn out, though with great resistance. So far as any of the old methods were applicable to the relief of this extensive fissure, the patient was beyond surgical aid. I determined, however, to put in practice the operation which had before appeared to me practicable.

The patient was placed in a strong light, his mouth widely opened, and the head well supported by an assistant; with a long, double-edged knife, curved on its flat side, I now carefully dissected up the membrane covering the hard palate, pursuing the dissection quite back to the root of the alveolar processes. By this process, which was not effected without considerable difficulty, the membrane seemed gradually to unfold itself, and could be easily drawn across the very wide fissure. A narrow slip was now removed from the edges of the soft palate, and with it the two halves of the uvula. By this means a continuous flap was obtained, beginning at the roots of the teeth and extending backwards to the edges of the velum palati. Finally, six sutures were introduced, on tying of which the whole fissure was obliterated. The patient was directed to maintain the most perfect quiet, and to abstain from making the slightest efforts to swallow even the mucus which collected in the throat, which was to be carefully sponged out as occasion required.

The following day he was doing well. He complained of some pain, or rather a sensation of excessive emptiness of the bowels, which was relieved by the use of a hot spirituous fomentation. On the third day, a slight hacking cough commenced, owing to the collection of thick ropy mucus in the throat and air-passages. The cough was temporarily relieved by an injection of a pint of oat-meal gruel into the rectum; during the night, however, it again increased so much as to tear away the upper and lower ligatures. I now allowed him to take liquid nourishment, which at once quieted the irritation in the throat. The other four ligatures were removed on the following days, the last being left until the 6th after the operation. This patient returned home into the country at the end of three weeks, a firm fleshy palate being formed behind, and half the fissure in the bony palate obliterated.

In the following spring I again operated on the remaining fissure in the hard palate, and succeeded in closing about half the extent of it, the tissues yielding with some difficulty, owing to the inflammation caused by the former operation. The small aperture which remained I directed to be closed by a gold plate. His speech was very much improved at once as well as the powers of deglutition, and he will, no doubt, ultimately, as the soft parts become more flexible, to a great degree recover the natural intonations of the voice.

Since performing this operation, I have had occasion to repeat it in thirteen different cases, which with one exception have terminated successfully, either in the closure of the whole fissure, or of both hard and soft palate, or so far that the aperture which remained in the bones could be easily closed by an obturator fitted to the adjoining teeth. Some of these cases have been exceedingly interesting.

In one case, a female, 35 years old, the fissure implicated not only the soft and hard palate, but also was complicated with a hare lip and division through the alveolar processes, the teeth being separated for the space of an inch. In this patient the fissure in the mouth was first operated on. The side of the nose, which was stretched across the fissure and consequently much flattened, was then carefully dissected up, together with the lip which supported it, from its attachment to the jaw, drawn across the opening and confined by pins and sutures. I was assisted in this operation, which was a very tedious one, the deformity being the most serious that had ever come under my notice, by Drs. Warren, Cabot, Roby and Keep. The patient was directed to keep quiet in bed, and to have an injection

of gruel every four hours. The operation was performed on the 23^d of June, 1841. On the 28th the pins were removed from the lip, which had united by the first intention; two of the sutures of the throat were also cut away. Some faintness arising from exhaustion, and from placing her in the upright posture, she was allowed to take liquid nourishment. On the 20th the other sutures were removed, a perfect union having taken place throughout. She returned home well on the 1st of July, seven days from the time of the operation. The improvement in her speech and appearance can only be appreciated by those who saw the patient. Previous to returning home, it was found necessary to remove one of the incisor teeth, which projected so far forward as to press upon and cause a deep ulceration of the adjacent soft parts.

The last case to which we shall allude, was operated on in the month of December, 1842. The patient was a young man, 20 years old, from Cambridge, whose prospects in life were materially affected by the malformation under which he labored, a division of the hard and soft palates, the bony separation being about three quarters of an inch. His speech was very imperfect; the deglutition not much affected. I was assisted in the operation by Dr. Hayward, Jr., Dr. Wellington, of Cambridge, and Mr. Townsend. The cutting part was done as in the preceding case, followed by the introduction of sutures. The threads were all removed in 48 hours, the adhesion being perfect. A small aperture afterwards appeared at the upper angle of the fissure, from a slough where the threads had been too tightly drawn; by touching this with the nitrate of silver, it was obliterated in a fortnight, and his speech almost completely restored. He was seen by a number of medical gentlemen before leaving town. In this case the improvement of speech was at once more marked than in any previous case; as a reasonable amount of time must necessarily be supposed to elapse even in the most simple fissures, before the soft parts, stretched almost to the tightness of a drum-head, can be expected to regain their natural and healthy movements.

I shall now proceed to make some remarks on various interesting circumstances which have been presented, both in the forms of this affection, and in the method of operation.

1st. As regards the fissure itself. In all patients which have thus far come under my notice, the direction of the fissure has been towards the left side of the jaw; and with infants on whom I have been called to perform the operation of hare lip complicated with

the above malformation, the jaw has been invariably divided to the left side of the median line. I have observed also, in simple hare lip, that the preference is to the left side of the face, and to this I have seen but a single exception. It will be generally found in those cases where the fissure of the maxillary bones is complete, that the bones forming the roof of the mouth are forced upwards, as it were, the palatine process of the superior maxillary bone of the right side being continuous with the vomer. This circumstance much increases the difficulty of the operation in this region, making the mucous membrane less accessible, which when detached and dragged into the horizontal line of course loses its support from the bones behind, at least this will be the case where the obliquity of the bones is considerable.

It would naturally be supposed, that from the want of protection to the mucous membrane lining the nostrils and posterior fauces, and the immediate contact of air and of foreign substances, the patient would be more liable to inflammatory affections of these parts; this, however, on inquiry, was not found to be the case, none of them being more than ordinarily liable to catarrhal attacks.

Operation.—The following is the method I have usually adopted.

The patient is placed on a low seat, in a strong light, his head firmly supported on the breast of an assistant, who raises or depresses it as circumstances may require. He is directed to keep the jaws widely separated, to retain any blood which may collect as long as possible, so as not to embarrass the operator, and restrain all efforts at coughing. To do this will require constant warnings and encouragement on the part of the surgeon, as there is a natural tendency to close the mouth as soon as any pain is felt, or there arises any collection of blood or mucus in the fauces which interferes with respiration. The use of a speculum, as directed by some operators, is altogether inadmissible; it not only obscures the light, but also prevents the proper manœuvres of the instruments. The mucous membrane of the hard palate is now to be carefully separated from the bones with a long, double-edged bistoury, curved on its flat side, and is rather peeled than dissected off, from the difficulty of making any sawing motion with the knife in this confined situation, the obstacles always being greater in proportion to the obliquity of the palatine vault. As the dissection approaches to the connection of the soft parts with the edges of the ossa palati, where the muscles are attached and the union most intimate, great care

must be taken or the mucous membrane will be perforated, and from these causes I have found this part of the operation to be the most embarrassing. As soon as this dissection is terminated, it will generally be found that by seizing the soft palate with a forceps it can be easily brought to the median line. If the fissure is wide, and this cannot be effected, I have found the following course to be invariably followed by success. The soft parts being forcibly stretched, a pair of long, powerful French scissors, curved on the flat side, are carried behind the anterior pillars of the palate; its attachments to the tonsil and to the posterior pillar are now to be carefully cut away, on which the anterior soft parts will at once be found to expand, and an ample flap be provided for all desirable purposes.

The edges of the palate may now be made into a raw surface by seizing them on either side with a hooked forceps and removing a slip with the scissors or a sharp-pointed bistoury. Our next object is to insert the ligatures, and for this purpose an immense armory of instruments have been invented. After the trial of nearly all of them I have found the most simple to be the most effectual. A small curved needle being armed with a strong silk thread, confined in a forceps with a movable slide, is introduced to the upper edge of the fissure, the needle being carried from before backwards on the left side, and from behind forwards on the right, or vice versa. In this manner, three, four or more ligatures may be successively introduced. The patient is now requested to clear his throat of mucus and blood, the ligatures are wiped dry and waxed, and tied with deliberation, beginning at the upper and proceeding gradually downwards, waiting a little between each ligature, in order to allow the throat to accommodate itself to this sudden and almost insupportable tension of the soft parts. No forceps are required for holding the first knot while the second is tied; the object is better effected by using the surgeon's knot, that is, by making two turns of the thread instead of one, and by enjoining perfect quiet on the patient for the moment, until the second knot is tied. It has been advised by some surgeons to wait a certain length of time, after the cutting part of the operation, before inserting the ligatures, five or six hours for instance, to allow all bleeding from the wound to cease. This appears to me a useless prolonging of the patient's suffering, and entirely unnecessary. I have never seen, in a single instance, either in the operations of surgeons abroad or in my own experience, any hemorrhage, that a little iced water, or the pressure for a short period with the finger,

would not easily arrest. The after treatment will not here require any notice, as it has been sufficiently noted in the previous detail of the cases.

In all the operations of this kind which I have lately had occasion to perform, the ligatures have been removed at the end of 48 hours, or at the farthest three days, and to this circumstance may be partly attributed the successful termination. If the threads be allowed to remain until the 4th, 5th, or 6th day, as recommended and practised by Roux, the apertures left by them will be of such magnitude as almost to approach each other, and to weaken the parts so as to cause a separation on any untoward motion of the patient.

In the *Gazette Medicale* for August, 1842, a resumé has been given of the cases operated on by Roux, and the average success declared to be as follows. Of simple fissure of the palate, a success of two out of three. When complicated with fissure in the hard palate, one only out of three succeeds. In this latter class of cases Roux still continues the practice of cutting away the soft palate transversely from the palatine bones, and stretching the flaps across the chasm, always leaving in this way, as will at once be perceived, an aperture in the bones to be artificially covered. The operation also must frequently fail from the want of a free vascular connection between the flap and the surrounding textures.

By the method which has been proposed above, it has been already stated, that rejecting the first operation, in which the course directed by Roux was adopted, 13 out of 14 were followed by success, and the case which terminated unfortunately may perhaps be of sufficient interest to be related. I stated to this patient, before the operation, the possibility of a failure, owing to the great deficiency of soft parts. Notwithstanding the extreme tension after the operation, a union took place, and the flaps held together until the 7th day, when the adhesions were gradually destroyed; the inflammation of the throat during this time being great, and the sufferings of the patient from the sense of dragging at the sides of the throat and under the ears extreme. The patient, who supported this trying and protracted operation with the most manly fortitude, was partially repaid for his disappointment by a subsequent successful operation on the lip, where the teeth were exposed, and the mouth and nose communicated, from an operation which terminated unfortunately, having been performed when an infant.

In addition to these remarks on the treatment of congenital fissure of the hard and soft palate in the adult, it may not be amiss to consider what is the best plan to be pursued when we are called upon to advise upon the affection at the time of birth. At this early period, nothing of course can be done in the way of a surgical operation on the palate; much, however, may be effected by a judicious plan of treatment, to reduce and even close the aperture in the bones, and reduce the fissure of the soft palate to a simple state, and thus give the patient a better chance for recovering his voice as he advances in life. Our object may be effected in two ways: 1st, by the early operation of the hare lip, with which the fissure of the bones is generally complicated; 2d, by the use of mechanical means.

For some years I have been accustomed, even in cases of simple hare lip, to recommend the operation to be done earlier than is usually laid down by surgical writers, and lately, since the attention of the profession has been called to the subject by the excellent paper of Dr. Peirson, of Salem, have performed it as soon after birth as possible. The advantages of this early operation will be at once seen—the pins may be removed in 48 hours, and the child is able to nurse as soon as the mother is ready to receive it at the breast. If the palate is fissured the advantages are doubled, and it is surprising with what rapidity the edges of the bones are approximated when muscular action of the lips is brought to bear on them. It is also a question to determine whether the teeth would ever approximate if the hare lip was allowed to remain. In the case already stated above, in a patient 35 years old, the fissure had rather increased than diminished by time.

I shall terminate this paper by giving two cases in point. On the 15th Sept., 1841, I was requested by my friend, Dr. Shattuck, Jr., to see a child who had been born a day or two before with a hare lip and extensive fissure of the maxillary bone and palate. I advised an immediate operation, but in accordance with the wishes of the parents it was deferred for a week. The lip and the alæ nasi were extensively dissected from their adhesions on both sides the fissure, and being drawn together were confined by two pins. The prostomion was then accurately adjusted by a suture made on the inside of the mouth with a fine cambric needle. These were all removed by the third day. The mother was now directed to make a pressure on the maxillary bone with the thumb and forefinger when the child was lying asleep in her lap, and to have a spring made with pads at each ex-

tremity, somewhat similar to a double truss, which was to be kept on a part of every day, and by the lateral pressure on the jaw assist in obliterating the fissure. This has been done with so much effect, that at the present time nearly half of the aperture is destroyed, and the bones at some parts are nearly in contact.

I have lately operated on an infant, directed to me by Dr. Bowditch, with the same deformity as that just related.

The child was 48 hours old, and the operation immediately performed. The sutures were removed in two days, and the child placed to the breast a few days after. It is hoped that by pursuing the same plan as in the last case, the result will be as satisfactory.

In the foregoing remarks, I have omitted to allude, from want of space, to the various improvements in the way of instruments, &c., which have been added to the operation of staphaloraphy. A number of valuable papers have been written on the subject by surgeons of this country—by Drs. Warren, Hosack, Bush, and lately a very interesting communication from Dr. Mutter, of Philadelphia, who has described an ingenious operation of his own for closing apertures existing in the bony palate.

March, 1843.

Reviews.

I.—*The Gulstonian Lectures for MDCCCXLII. On the Mutual Relations of Anatomy, Physiology, Pathology and Therapeutics, and the Practice of Medicine.* By MARSHALL HALL, M.D., F. R. S. Lond. and Edin. &c. &c. Octavo. Pp. 86. London. Ballière, 1842.

If deep and practical interest in the subjects considered, a clear and vigorous style, in which every word is pregnant with meaning, no little originality in the views brought forward; and a pervading tone of real and earnest devotion to the cause of science, entitle a book to the consideration and favor of the public, this little volume will surely receive a hearty welcome amongst us.

The object of the book cannot be better given than in his own words. Having alluded to the prejudice so commonly entertained against the study of anatomy and physiology, on the part of the physician or the surgeon, as tending to lead him from *practical* views, he says, “My object is, if possible, to remove a prejudice so unfounded, so injurious to our science, and so unjust towards its ardent cultivators, by demonstrating that the physiologist alone can become the truly able practitioner; that *science* alone, properly pursued and applied, and not what has been fallaciously, and, I fear too often, insidiously, denominated *experience*, can lead to a just diagnosis, unfold the nature of disease, suggest new remedies, and guide us in the just employment of the old.” How well he has succeeded in this attempt, can only be fully shown by a careful perusal of the book itself. Indeed, the whole is so intimately bound together, that justice cannot be done to its merits in a notice as brief as this. We can but glance at some of the most important topics, presenting them to the notice of the profession as subjects for farther investigation.

The book is in the form of three Lectures, on Physiology, Pathology, and Therapeutics. A classification in a tabular form is prefixed, beautifully exhibiting the author’s peculiar views of physiology, but unfortunately too extensive for insertion here.

The first lecture on Physiology is devoted chiefly to Respiration and the Circulatory System. Adopting the opinion of Sir H. Davy, recently confirmed by M. Edwards, that respiration consists essentially in the absorption of oxygen, and the excretion of carbonic acid, Dr. Hall suggests the following momentous question: Which of these two functions is the more immediately important to life? His view of the subject is given briefly but clearly in these few words—"If we compare the duration of life when an animal is made to respire pure nitrogen or hydrogen, with its speedy extinction in the case of submersion or suspension, we can scarcely resist the conclusion, that the exhalation of carbonic acid is a far more immediately vital process than the absorption of oxygen; a conclusion which we certainly should not regard, in the first instance, as the most probable one."

And in general terms the function of egestion is more immediately essential to life than ingestion. "Privation of food may be sustained for several weeks; it is pure inanition; but suppression of urine, of bile, of the secretion of the fæces, is fatal in a much shorter space of time; the egerenda, if retained in the blood, proving, like the retained carbonic acid in the lungs, positive poisons to the vital organs." After the excretion of carbonic acid by the lungs, that of urine, by the kidneys, is the next most important office of egestion.

The beautiful application of the *Diffusion of Gases*, by Prof. Graham, to explain the phenomena of Respiration, is then given at some length; the substance of the matter is briefly this. It is evident that in ordinary respiration, the slight mechanical compression cannot empty the ultimate air-cells of their contents; not more than 20 cubic inches, or one-fifteenth of the contents of the lungs, are thrown out, from the application of a general pressure to the whole; and this portion is evidently that nearest the outlet, or the contents of the larger tubes. The bulk of the air is not altered during respiration, although, for a quantity of oxygen, carbonic acid is substituted. This substitution, which is the great end of respiration, takes place most abundantly in the minute air-cells; and the carbonic acid there produced must be moved along the smaller tubes by the diffusion process (viz., that property of gaseous bodies, by virtue of which the presence of one offers no obstacle to the complete diffusion of another), till it is thrown into the larger tubes, to be expelled by the ordinary action of respiration. But the action of diffusion—which is extremely energetic and also inevitable—is always two-fold; at

the same time that carbonic acid is being carried outwards from the air-cells, oxygen is carried inward in exchange, and the necessary circulation kept up through the whole lungs. Prof. Graham also applies this law of diffusion to explain the permanent inflation of the ultimate air-cells, which are known to be destitute of muscular fibre. The heavy carbonic acid is exchanged for a *larger* volume of oxygen, in the proportion of the diffusion volumes of the two gases; viz. 81 carbonic are replaced by 95 oxygen; thus there is a tendency to accumulation on the side originally occupied by the carbonic acid, and the air-cells are kept fully and permanently distended. Dr. Hall here starts the inquiry, by what addition of carbonic acid to the atmosphere, would the diffusion of this gas in the lungs, and its consequent exhalation from the blood, be entirely prevented? The question is of great interest in reference to asphyxia, induced by the charcoal fire and the "choke damp," and is well worth attention and experiment.

The circulatory system is treated of rather more fully, and some new and interesting views of its physiology are advanced, but we can only notice one or two of the most important. His remarks on the capillaries have much interest, but do not differ materially from those of Prof. Muller: the doubt expressed, as to "whether the true capillaries be really *vessels*, with distinct parietes, or only *canals*, formed in and by the other tissues," is, however, pretty much set at rest by Muller, in his "Elements of Physiology" (trans. by Dr. Baly, ed. 2, vol. i. p. 230), where his arguments amount to actual demonstration. The "remarkable fact, observed in the web of the frog, that minute nerves pursue a course close to the minute arteries" (which distribution is also observed in other tissues), is worthy of consideration, as tending to throw some light upon the immediate causes influencing the secretions, and the change of arterial into venous blood.

But his remarks upon the coronary circulation are of such extreme interest as to *demand* a more extended notice. And first, he asks, why are the two hearts conjoined together? The reason seems to have escaped physiologists. Mr. Mayo states expressly, that the two hearts, "for every purpose answered in the animal economy, might as well have been disunited." "But," says Dr. Hall, "there *is* a physiological reason, a physiological purpose, in this conjunction of the two hearts, of the utmost interest. The coronary arteries convey to the entire double heart, the stimulus of arterial blood. By its cir-

culatation in this substance, it acquires, as in every other part of the system, the venous character. It is become a poison until its arterial character is renewed. How is it to be disposed of?

“Now if the two hearts were really planted separately in the animal frame, the *left* heart might be supplied by arterial blood; but the right heart could not receive arterial blood without a special distribution of vessels for this purpose. And, on the other hand, when the blood in the left heart had assumed a venous character, it could not, without a similar provision, be conveyed into the veins. Both these objects—the supply of arterial blood to both hearts, and the course of the venous blood from both hearts—are accomplished in the most beautiful, admirable, and simple manner, by the conjunction of both hearts together.

“But other objects are attained by this arrangement. In the first place, the power of the heart is, by means of the elasticity and reaction of the aorta, impressed upon the coronary blood; the coronary arteries, capillaries and veins are distended; and the erection of all its tissues, its parietes, its columnæ carneæ, and its valves, and the diastole of its several cavities, are accomplished with the accuracy and at the very moment required. The very contractile force of the heart is thus applied for its own dilatation!

“The aorta, by its reaction, impresses upon the coronary blood precisely the force of the heart itself; so that the diastole of this organ may be said to be effected by a force equal to that of its systole; nay, by that very systole itself, though not acting so advantageously. The tissues of the heart are erected; the parietes are distended and separated; the columnæ carneæ, especially those attached to the valves, are elongated. The opposite phenomena take place when the interstitial and contained blood has excited the systole.” Dr. Hall has observed actual facts analogous to those he has been supposing. On examining the circulation in the lung of the frog and toad, he has distinctly observed the organ to be elongated, its parietes separated, and its apex raised at each pulsation of the heart. This observation we have several times verified. “These remarkable effects,” he continues, “are, doubtless, produced by the accurately proportionate and simultaneous supply of arterial blood to the coronary arteries of both auricles and both ventricles. Thus is the beautiful rhythm of the heart’s action ensured. Had the two hearts been placed at a distance from each other, this regularity of its action would have been impaired by a variety of circumstances, of posture,

of muscular action," &c. Would not the fact, that the heart of cold-blooded animals continues to pulsate for some time after it is removed from the body, seem to render this of less importance than Dr. Hall supposes?

"In the last place, we may advert to the condition of the animal economy in the fœtus, and observe that the two hearts could not, in that period of life, have been separate; for it is essential to fœtal existence, that the two hearts should be conjoined in function as well as in position. In that early condition of existence, the lung is only supplied with arterial blood, like the other organs of the body. It would have been contrary to every principle in physiology for the whole of the blood of the system to have been sent through the lungs without object or purpose."

But passing over the rest of this lecture, which is full of valuable hints, we come to the subject of pathology. Where nothing is superfluous it is impossible to condense, and a single case, given at length, must stand as a sample of the whole lecture. It illustrates the effects of an interruption in the circulation at one point, upon the other portions of the circle.

"Mr. C——, aged 63, a barrister, called on me on the 10th of September, 1835. He had returned from the circuit, during which his friends had perceived his altered appearance. I was struck with his *breathlessness*, small, indistinct pulse, pallor, thinness, &c. I appointed to see him at home. On the next day I saw Mr. C—— at his own house. There were breathlessness on the slightest exertion, augmented impulse of the heart, without either distinct second sound or *bruit de scie*, slight *anasarca*, and slight *icterus*. The progress of the case was rapid. The breathlessness became urgent; there was a distinct rattle over the posterior right side of the thorax; the left ventricle beat rapidly, with considerable impulse, and without distinct second sound or bruit; there were some cough, distinct icterus, and augmented anasarca; the jugular veins were turgid; the pulse was small, irregular, indistinct. To these symptoms hæmoptysis succeeded. The only position which could be sustained was the erect. The cough became troublesome. The breathlessness, the rattle on the right posterior side of the thorax, the rapid, forcible beat of the heart, all the symptoms enumerated, continued, with occasional sickness. Gradually the cheeks became cool, the beat of the heart less forcible, the pulse less indistinct, the posture less raised; the extremities cold and clammy, and the patient sunk very slowly during several days.

“ *Examination.*—The organs were examined 36 hours after death. There were slight icterus and anasarca. *The head* was not examined. *The thorax.*—The *left* cavity of the pleura contained one pint of sero-sanguineous fluid. The costal pleura was very vascular; there were no adhesions, except between two contiguous portions of the lung, and of this to the pericardium. The *right* cavity of the pleura was obliterated by adhesions. The *trachea* and bronchia were filled by frothy bloody mucus. The bronchial tubes were dilated, and their lining membrane redder than natural. Both lungs, but especially the right, were gorged with bloody fluid, so that only the upper portion gave the healthy crepitus on pressure between the fingers. A portion of the lower lobe of the *right* lung presented a circumscribed apoplexy of the size of an egg; similar but smaller apoplexies were found in the middle lobe, and in the upper lobe of the left lung. The two layers of pericardium adhered by means of coagulable lymph, which admitted of being readily torn and stripped off. This membrane was very vascular within; and, on its exterior surface, it was loaded with adeps and serum. The *heart* was considerably enlarged; the *right auricle* and ventricle were dilated and thickened; the auriculo-ventricular and pulmonary valves free from disease; the pulmonary arteries and their branches appeared enlarged; the *left auricle* was much dilated and hypertrophied; the auriculo-ventricular valve was very much thickened, of the firmness of cartilage, and admitted one finger only; the *left ventricle* was slightly enlarged and hypertrophied; the *aortic* valves were ossified, and rigidly immovable, and their orifice so contracted as not to admit the little finger.

“ *The abdomen.*—The peritoneal cavity contained no fluid. The *liver* was small and its surface granulated. It was shown to Mr. Kiernan, who stated that it was in the second stage of hepatic-venous congestion. The gall-bladder was full of dark-colored bile; its ducts free. The peritoneum covering the intestines was deeply congested. The intestines themselves, from the middle of the jejunum to the rectum, were highly congested—the valvulæ conniventes being of a deep purple hue, and presenting numerous small patches of ecchymosis. The spleen, pancreas, kidney, &c., were healthy.

“ These morbid structures are preserved in this bottle. They form a beautiful series, and they portray the true *pathology of the disease*—unlike the usual scraps of morbid anatomy which we find in our museums.” (The appearances of the different organs are given

in a colored plate attached to the volume.) “The whole explains, too, what I would venture to designate the living pathology as distinguished from the morbid anatomy. It is impossible, in effect, that morbid appearances should follow in a more distinct order, or account more lucidly for the symptoms during life. I know of no case on record so illustrative of the effect of obstruction of the circulation, upon the *arriere* part of that circulation.

“The breathlessness is accounted for by the condition of the valves of the aorta and the left auriculo-ventricular valve. The smallness and indistinctness of the pulse by the former; the turgid jugulars by the impeded circulation, propagated from the lungs to the right side of the heart. The impeded flow of the blood through the aortic and mitral valves, led to congestion in the lungs, and this amounted to such a degree as became true ‘apoplexie pulmonaire;’ in consequence of this impeded circulation in the lungs, we have congestion of the hepatic vein in its second stage; as a further consequence of hepatic-venous congestion, we have congestion of the veins of the intestines, so remarkable on the post-mortem examination. The congested state of the liver led to the icterus, and to the hæmorrhagic state of the intestine. That of the vena cava to the anasarca.”
 *****“These effects of an impeded flow of blood in one part of its double course should be borne in mind, if ever the aorta should be again tied.”

One other interesting topic we must mention. Dr. Hall considers that the cases of sudden death arise, chiefly, from interruption of the coronary circulation! Ossification of the coronary arteries; a fatty condition of the heart; a dilated and feeble state of the left ventricle, &c., are causes producing this terrible result. His reasons for this opinion cannot be given here, but the investigation of the subject, as he has proposed, by arresting the coronary circulation by ligature, and the actual injection of substances into the coronary arteries, is in the power of any one.

The most important subject treated in the last lecture—on Therapeutics—is the action of poisons. Dr. Addison and Mr. Morgan have advocated the theory of nervous agency; Mr. Blake that of vascular agency exclusively. Dr. Hall is of the opinion, that, whilst *either* of these doctrines *alone* is inadequate to the explanation of the whole series of phenomena, both are absolutely required for this purpose. He divides all external agents into two classes:—

I. Those which act *physically*, and on the nervous system; and

II. Those which are *absorbed*, and act through the vascular system.

“The former act on the peripheral origins of the incident nerves of the true spinal and ganglionic systems: such as mechanical violence; chemical violence; the sudden impulse of light; heat; cold; galvanism, &c. The latter constitute the class of remedies and of poisons properly so called: these must pass into the state of solution, be absorbed, be carried along with the blood, &c. In both cases, the force of the agent may be finally exerted in the nervous centres.” Dr. Hall details a series of experiments performed by himself in conjunction with Mr. H. Smith, similar to those of Sir B. Brodie, Wedemeyer, Emmert and others, tending to show that narcotic poisons, at least, act through the medium of the circulation; I may mention two of the most satisfactory.

“Ex. 4. We tied a ligature round the thigh of a frog, *excluding the sciatic nerve*, but so as to arrest the circulation; and we applied the strychnine to the web. In this case the spinal marrow was not divided, and sensation remained. Nevertheless, no tetanus took place in the space of a whole hour. We now removed the ligature; the circulation was speedily restored, and in five minutes the frog became tetanic.

“Ex. 5. We now divided the spinal marrow just below the cerebrum, so as to annihilate sensation, and we then divided all the tissues of the thigh, *excluding the femoral arteries and veins*, keeping these asunder at the distance of a line. The circulation was very perfect in the web. We applied the strychnine. In thirty minutes the animal became strongly tetanic!”

According to Prof. Muller, C. Viborg applied almost a drachm of concentrated prussic acid to the brain of a horse, laid bare by the means of a trephine, without the slightest symptoms of poisoning being produced. (See Lund, *Vivisectionen*, pp. 103, 104.)

The action of poisons through the medium of the circulation, upon the nervous centres, is sufficiently probable in the generality of cases; but how shall we account for the almost instantaneous action of prussic acid? The time required for it to enter the circulation through the medium of the capillaries, has been variously stated, at from half a minute to two minutes, but this violent poison proves fatal in a few seconds. Dr. Hall does not notice this fact. Prof. Muller supposes the acid to possess “great volatility and power of expansion, by which it is enabled to diffuse itself through the blood

more rapidly than that fluid circulates," but his explanation is far from satisfactory. The subject would well repay investigation.

As instances of Dr. Hall's first class of external agents, viz., those acting physically and on the nervous system, we might mention traumatic tetanus and hydrophobia. These diseases present phenomena similar to those produced by poisons, the difference being, that the former result from irritation, conveyed to the nervous centres through an incident nerve, whilst in the latter the circulation is the vehicle of transmission.

But there is no room for further comment. This brief notice is necessarily imperfect from the sketchy character of the book itself. But enough has perhaps been said to show the value of the book, and to furnish material for future thought and experiment.

Bibliographical Notices.

I.—*Bell's Select Medical Library. A Treatise on the Structure, Economy and Diseases of the Ear*; being the Essay for which the Fothergillian Gold Medal was awarded by the Medical Society of London. By GEO. PILCHER. First American from Second London Edition, with Notes.

THE January number of this valuable reprint of foreign works, brings us the above Treatise, enriched with a number of illustrative Lithographs, forming an excellent monograph upon a subject upon which the profession at large need much light. The crowded state of our pages must be our excuse for denying it the full notice it deserves. The "Bulletin," hitherto published with the Library, will be published monthly and separately to subscribers, each number increased to thirty-six pages, the whole forming a large amount of matter for an exceedingly small sum.

II.—*The Diseases of Females, including those of Pregnancy and Childbed.* By FLEETWOOD CHURCHILL, M.D., author of the Theory and Practice of Midwifery, Lecturer on Midwifery and Diseases of Women and Children in the Richmond Hospital School of Medicine, &c. &c. Second American Edition, with Notes by ROBERT HUSTON, M.D. Philadelphia: Lea and Blanchard. Pp. 575. 1843.

THE second edition of the above work has just appeared from the press, greatly enhanced in value by the remarks appended by the American editor. Of all the works treating of these diseases, we have met with no one better adapted to the wants of the student. It embraces within a moderate compass a very wide extent of disease, giving the history and treatment with great conciseness, clearness and impartiality. It is hardly detailed and full enough to meet the wants of the practitioner, although by him it will be found convenient as a book of reference for authorities.

III.—*A Treatise on the Diseases of the Eye.* By WM. LAWRENCE, F. R. S., Surgeon Extraordinary to the Queen, &c. From the last London Edition, with numerous additions and sixty-seven Illustrations, by Isaac Hays, M.D., Surgeon to the Will's Hospital, &c. Philadelphia. Lea & Blanchard. 1843.

THE work of Mr. Lawrence has long since taken rank among the Classics upon its particular subject. The present work is a reprint of the edition of 1841, much revised and enlarged from the former, which appeared in 1833. The American editor, Dr. Hays, has made numerous and valuable additions; the whole making one of the best of works upon the subject.

IV.—*Treatise on the Dental Art, founded on actual experience,* illustrated by two hundred and forty Figures in Lithography, and fifty-four Wood Cuts. By F. MAURY, Dentist of the Royal Polytechnic School. Translated from the French, with Notes and Additions, by I. B. SAVIER, Doctor of Dental Surgery. Philadelphia. Lea & Blanchard. 1843.

MAURY has always sustained a distinguished reputation among the French school of dentists, and we cannot but augur well of the present translation. There appears to have been added much matter, and if our limits would have permitted, we should gladly have availed ourselves of the assistance of gentlemen especially conversant with this branch, to have given it a more extended notice.

V.—*Lectures on the Diseases of the Urinary Organs.* By SIR BENJAMIN C. BRODIE, Bart., F.R.S., Sergeant Surgeon to the Queen. Philadelphia: Lea and Blanchard. 1843.

THE present work bears on its title page, "from the third London edition, with alterations and additions," leaving a doubt in the mind of the reader whether he is to get merely the alterations and additions made to the *second* London edition, or is to find something taken from American practice and science. We have discovered, however, indications of no other hand than that of Sir Benjamin, whose reputation is sufficient to assure the reader that he will find a series of plain, practical and useful remarks upon the subject in question.

VI.—*A System of Practical Surgery.* By WILLIAM FERGUSON, F.R.S. E. &c., with two hundred and forty-six Illustrations by Bagg, engraved by Gilbert. With Notes and additional Illustrations, by GEORGE W. NORRIS, M.D., Surgeon to the Pennsylvania Hospital. Philadelphia: Lea & Blanchard. 1843.

THIS work most completely supplies a want in English surgical books. It is essentially practical; in addition to what is given in a manual like that of Malgaigne, or other works of a similar character which have been translated, there is enough upon surgical disease to make it something more than the mere manual. It differs, though its merit is of the same order, from the work of Drutt, of which we had occasion to speak very favorably in a previous number, in that it relates more particularly to practice. Both books together will make a complete treatise, which should be in the hands of every student, and will materially assist every practitioner. The additions, by Dr. Norris, add much to the value of the work, being characterized by sound practical good sense, as is every thing we have seen from his pen.

NATIONAL INSTITUTE.

WE give an insertion to the following "Circular," recommending it to the attention of all under whose eye it may fall. Our limits forbid a more extended notice.

MEDICAL DEPARTMENT.—CIRCULAR.

Sir,—The National Institute, at its monthly session, on the 9th of January, 1843, instructed the officers of its Medical Department to issue a circular, inviting the attention of the corresponding and resident members, and other gentlemen who feel an interest in the advancement of medical science, to such facts as are connected with disease, health, and longevity, soliciting communications upon these subjects.

The undersigned, therefore, will feel obliged to you for any communications relating to these subjects, and especially for answers to the following inquiries:

1. What is the medical topography of your district or section of country, and have you any extensive sources of malaria?

2. What has been the effect of agriculture, the felling and clearing off the forests, the draining and cultivation of the soil, upon the climate, upon the health of the inhabitants, and upon the character of disease?

3. What manufactories are there in your district, and what is their effect upon the constitution and health of the operatives?

4. What epidemic and endemic diseases have occurred under your observation, or of which you can get a correct account from others?

5. What has been the character of the fevers of your district, what the cause, what the most successful mode of treatment, what the pathological changes found upon examination after death, and how far is there proof that they have under any circumstances been transmitted by contagion?

6. What change has taken place in the type of disease within a series of years in your district, and to what is such change to be ascribed?

7. What is the average duration or probability of human life in your population; has it increased within a number of years, and in what proportion, and from what causes?

8. What is the relative degree of health and longevity of the whites and blacks, the increase and mortality of each?

9. What is the relative degree of health, longevity, and increase of the slaves and free blacks; which suffers most from the influence of our epidemic diseases; and what are the causes which produce different results in these respects upon the two classes?

10. What is the annual number of marriages, births, and deaths, to each thousand of your population, and what is the proportion of male and female children born?

11. Have you any cases of great longevity; what have been the occupation and habits of such persons, and were they natives of your district or emigrants, and from what country and place?

12. Have you any persons who live exclusively upon a milk or vegetable diet, and what is the apparent effect of such diet upon the duration of life, the health, the strength, and activity of the body and mind?

13. What has been the effect of the temperance reformation upon the strength and health of your citizens?

14. The history of any interesting cases of disease which may have occurred under your observation, and especially in which the patho-

logy was ascertained by post-mortem examination, will be regarded as valuable. The discovery of new therapeutic agents, or the new application of old ones ; also, meteorological observations, with whatever else illustrates the origin, progress, nature, and cure of diseases ?

15. Pathological specimens of morbid structure, with an accompanying history of the origin, progress, and termination of the cases, will be highly acceptable. Such specimens will bear the name of the donor, and be placed in the National Museum.

16. As one object of the Institute is the formation of a Library, the undersigned will be obliged by the presentation of a copy of your own medical works or those of others, which it may be convenient for you to bestow.

All communications should be addressed to FRANCIS MARKOE, Jr., Esq., Corresponding Secretary of the National Institute.

THOMAS SEWALL, M.D.,

Chairman of the Medical Department.

JOHN M. THOMAS, M.D., *Vice Chairman.*

MARCUS BUCK, M.D., *Secretary.*

HARVEY LINDSLY, M.D., } *of the Committee.*
JAMES WYNNE, M.D., }

Washington City, D. C., January 12, 1843.

Scientific Intelligence.

EXTRACTS FROM THE REPORTS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

Nov., 1842. Dr. John D. Fisher reported the following cases of disease following the dissection of a case of Puerperal Fever.

On the 23d of September, 1842, Dr. Whitney, of Newton, assisted in the post-mortem examination of a lady who died of puerperal fever. This lady was confined on the 18th of September of a child weighing 11 3-4 pounds. The labor was severe and protracted, and the placenta was taken away by force. On the 20th she exhibited some febrile symptoms, and on the 22d she died. The autopsy was made on the 23d, and the following pathological appearances were noticed.

The abdomen was enormously distended and tympanitic throughout. On laying open the abdomen, an excessively offensive odor escaped, and the intestines were found distended with gas. The peritoneum was inflamed, particularly in the cavity of the pelvis, to which region the inflammation was principally confined; and the cavity contained at least a quart of sero-purulent fluid, interspersed with flocculi. The uterus was very large and flabby; its neck being still nearly obliterated, and its mouth irregular and ragged. The right ovary was in a state of commencing suppuration; the left was enlarged to the size of a common orange, and was filled with a tar-like fluid. The walls of the uterus were about half an inch in thickness, and its cavity was filled with a quantity of dark, grumous, thick liquid matter, which was sticky and offensive. The lining membrane of the organ did not exhibit any peculiar marks of inflammation. Dr. Fisher stated the above pathological appearances, as they were given to him by one of Dr. Whitney's students, and which are like those usually noticed in such cases. And he mentioned them here, as they are connected with the facts which he now proceeded to relate, and of which they were in one way or another the cause.

The dissection was performed by Dr. Noyes, of Needham, who was the physician of the deceased. Dr. Whitney assisted by holding the parts, and elevating the various organs, as well as in examining them and their contents. These offices he performed with his left hand alone, the right having a wound upon it; the former was therefore in immediate contact with most of the organs of the abdomen and pelvis, and was consequently

besmeared with the matter flowing from these organs. Mr. Hackett and Mr. Mason, students of Dr. Whitney, replaced the organs in the cavity of the abdomen, after the examination was completed, and sewed up the body. This autopsy, as before stated, was performed on the 23d of September, at 4, P. M.

While washing his hands after the operation, Dr. Whitney noticed that blood oozed from a small hang-nail which was on the thumb of his left hand. Of this, however, he took no thought until he noticed some inflammatory symptoms in this arm.

On the 24th, he attended to his business, and visited Boston in the afternoon. During his ride home he experienced severe chills, and in the evening made use of means to promote the perspiration, but still the chills continued. Upon taking off his coat, he experienced a sensation of soreness on the middle of the dorsum of the fore-arm, occupying a space of the size of a crown. The spot was red, and tender to the touch, but not elevated; supposing it to be the commencement of a common boil, he took no further notice of it at that time. Through the night he continued chilly.

In the morning of the next day, Sept. 25th, he felt better than on the night previous; his arm being more sore, however, than before. During the forenoon he attended to his business, and in the afternoon went to church. The arm pained him somewhat during the day, and was more inflamed, so much so as in the evening to induce him to examine it attentively. He now discovered red lines extending along the inner side of the arm towards the axilla. The left axillary gland was tender to the touch. Through the night he suffered intense pain in the whole of the arm, and severe chills; did not sleep.

On the morning of Sept. 26th, he felt faint upon rising, and on going down stairs he fainted. The left fore-arm was now very much swollen, an erysipelatous inflammation, extending over its inner surface, from the wrist to the elbow-joint; pain and soreness were experienced along the course of the lymphatic vessels of the humerus, as far as the axilla. The axillary gland was more tender, sore and swollen; the head was intensely hot, face flushed, headache severe, and the pulse 100 in a minute. It was at this period that Dr. Whitney suspected the cause of his illness, and supposed that his system had imbibed poison from the subject whose autopsy he had assisted in making three days previously; he therefore immediately sent for Dr. Spaulding, his father-in-law. A cathartic was now given; leeches were applied to the arm, followed by poultices wet with a solution of sugar of lead; and after a few hours a blister was applied on the humerus, just above the elbow-joint. In the evening a considerable hemorrhage from the nose took place; a poultice with

laudanum was applied to the arm, to relieve the severe pain. During the night, the febrile symptoms, pain in the arm and head were so severe, that sleep was impossible even by the aid of morphine.

In the morning of Tuesday, Sept. 27th, the arm was still more swollen, and so sore and painful that he could not suffer it to be moved or touched. The inflammation had now extended above the elbow, half way up the humerus. The tongue was coated and dry, thirst great, pulse 95 to 100, bowels confined. During the day he complained of a deep-seated soreness in the chest, and also an acute pain in the region of the liver. The anti-phlogistic and cathartic treatment was continued, a blister was applied round the upper portion of the humerus to arrest the extension of the inflammation upwards; and a large one was excited over the liver to relieve the intense pain experienced in this region. The arm was dressed with cloths moistened by a solution of the acetate of lead, and poultices.

The night was passed more comfortably, and in the morning of Wednesday, Sept. 28th, he expressed himself as feeling a little better. On this day, Dr. Fisher was requested to visit him, and gives the following account of the patient. He found him lying on his back in bed, his head elevated, and his left arm resting on a pillow at his side; face flushed; skin hot; pulse 100, full, hard, and slightly rebounding; respiration hurried. The left arm was inflamed and swollen from the wrist to the point of insertion of the deltoid muscle, the fore-arm being at least double its natural size. Two bluish spots of the size of a dime existed on the inner face of the fore-arm, one opposite the ulna, two inches below the elbow-joint, the other between the radius and ulna near the middle of the arm. Dr. Whitney complained of great tenderness and soreness in the diseased arm, and was unable to move it of himself, saying that it appeared as if it were a leaden member attached to him, possessing unusual sensibility. He complained of soreness in the axilla, and also in the thorax, particularly along the sternum; also in the region of the liver, over which a blister had been applied and was still open; in the groins, particularly the left one; and in the left testicle. "In fact," said he, "it seems to me that every gland in my body is sore, painful, and swollen." The pain and deep-seated soreness in the region of the liver were particularly referred to, and pressure in this part was intolerable. Gentle pressing on the left axillary and inguinal glands and testicle gave much pain. The tongue was coated in the middle, highly red at its borders, and dry. Thirst urgent. Bowels rather inactive and costive. Abdomen tumid and tympanitic, urine high colored. One of the marked symptoms attended the respiration. This was hurried, irregular, and accompanied by the feeling of oppression, and occasionally by hiccough. The lungs appeared to be healthy, and to admit the air freely; but the function of respiration seemed to be performed with labor,

and in an imperfect manner. The free admission of external air into the room by the windows was constantly demanded ; it gave, however, only partial relief. The antiphlogistic treatment was still continued, poultices were constantly applied to the arm, fomentations ordered to the abdomen, and cathartic medicines to be given. A blister was placed around the arm, above the point to which the inflammation had extended.

On the morning of Thursday, Sept. 29th, it was reported to Dr. F. that the patient had passed rather a comfortable night, but was at times somewhat delirious. The medicine had produced its desired operation, and the blister had drawn well. The general symptoms were nearly the same, pulse 94. The arm presented the same appearances as on the day previous, save that it now exhibited a smooth, shining surface, as if the integuments were distended to their utmost extent. The inflammation had not extended beyond the blister, which evidently had arrested its progress upwards ; it had, however, invaded the dorsum of the hand. The patient still complained of great soreness in the glandular system ; the soreness in the region of the liver was, however, partially relieved by the blister which had been applied. During the afternoon the febrile symptoms increased ; and in the evening, feeling nausea, with a sensation of weight at the stomach, Dr. W. took, of his own accord, an emetic, which operated rather powerfully, and with relief. The night was passed with much restlessness and delirium.

The febrile action on the next day, Sept. 30th, was much less, pulse 80, and symptoms of prostration were apparent. The arm had lost something of its intense redness and sensibility, and the process of suppuration had evidently commenced in it. The patient had no power over the arm ; his brain seemed to be inactive, and mental operations sluggish. All active treatment was now abandoned for one that was tonic and stimulating ; quinine and wine were now freely administered. This course was considered to be demanded, notwithstanding the tongue was red, dry, and thickly coated. The poultices were still continued to the arm.

Oct. 1st. The symptoms of prostration were alarming ; the patient presenting the general phenomena which characterize typhus fever in its grave form. The arm was less painful, but more swollen, and pus was evidently formed and accumulating beneath the integuments of the forearm near the elbow. The treatment with wine, quinine and poultices was continued. During the day and subsequent night the prostration seemed to increase, and the patient was delirious during the latter, so that fears were entertained by his friends that he would not survive till morning.

On visiting him the next day, Oct. 2d, Dr. F. found that the fears of his friends were not without foundation. Symptoms of extreme prostration of the vital powers were evident in all the organs. The features were

shrunk and bedewed with a clammy sweat, the respiration was labored, the action of the heart was feeble and rapid, the brain was oppressed, so that the patient was unable to comprehend questions put to him, or to articulate answers. The tongue was dry, stiff and hard, and deglutition was somewhat difficult. The bowels were swollen and inactive, and fluids when passing into the stomach were attended with a metallic tinkling, like that produced by agitating water in a thin glass flask or bottle. The arm had assumed a leaden hue, and matter fluctuated in two places on the fore-arm, corresponding to the bluish or gangrenous spots, which were early noticed as being situated, one near the elbow, the other in the middle of the arm. The stimulating and tonic treatment was continued; brandy, wine, quinine and ammonia were freely given, and stimulating injections were ordered in aid of the tonics given internally. In the after part of the day and during the night the powers of the system seemed to rally; and matter began to flow from the arm at the two points where it had accumulated.

The next day, Oct. 3d, the powers of the system remained about the same, and the discharge from the arm was free and promoted by poultices. Broth and beef-tea were now added to the stimulating and tonic treatment, notwithstanding the state of the tongue and digestive organs seemed to forbid their use. From this period to that of convalescence and recovery, the history of the patient is quickly told.

For about a week it seemed doubtful whether the powers of the system would hold out, supported as they were by the free use of brandy, wine, quinine, and animal diet. At the end of this period, however, a favorable change was apparent. The tongue began to clean, the natural appetite to return, the bowels to act, and the pulse and strength to improve. The discharge from the arm continued freely from the two openings, and sloughing commenced from three or four small points on the opposite side, or dorsum, of the arm. The cuticle of the fore-arm was raised for a considerable extent, and came off with the poultice.

The patient during all this time had not been moved from his bed, and was most of the time unconscious of what had been going on. He was now, Oct. 10th, so prostrated that he could not move himself in bed, and had no power over his diseased arm. The same course of treatment was persevered in, and on the 20th of October the patient had so much improved in his strength that he was placed in a chair. The discharge from the arm still continued.

By the 1st of November he was able to take the air, and on the 14th to ride to Boston. His arm has ceased to discharge matter, and is reduced to less than its natural size; he is still unable to use it, or to move his fingers.

During the period of his greatest prostration, Dr. Whitney drank daily a quart of wine, and from a gill to half a pint of brandy, and took from 12 to 20 grains of quinine.

CASE II. That of Mr. Hackett, a medical student.

As has been stated, Mr. Hackett assisted in sewing up the body from which Dr. Whitney appears to have imbibed poison. Mr. H. had two small wounds of the size of a pea on a finger of his left hand, caused by a burn. These wounds were covered by hard scabs, and were considered to be nearly healed. On the 25th of September, three days after the autopsy was made, Mr. H. experienced chills, febrile symptoms, and a soreness in his left arm. On the 26th, 27th, and 28th, these symptoms increased, particularly the soreness and pain in the left hand and arm, but they did not confine him to the house. On the 29th, he felt so unwell, and suffered so severely from constitutional disturbance and pain in the arm, that he took to his bed; and on the 30th called in Dr. Spaulding, who discovered in him the same constitutional symptoms which characterized the case of Dr. Whitney, and reports that although the left arm was the seat of pain and tenderness, yet it was not swollen or inflamed; that the gland of the axilla was tender and painful, and that the patient complained of general soreness in the whole left side of the body, and manifested great nervous and vascular excitement. An emetico-cathartic was administered, and other remedies ordered for the purpose of relieving the symptoms. On the 2d of October, Dr. Fisher saw the patient, and found him to be laboring under the symptoms just related. The pulse was rapid, rebounding, rather hard, and the brain and nervous system highly excited. The patient complained mostly of pain and soreness in the left side of the body, had but little power over his left arm, and could not turn himself in bed, from want, as he stated, of power in left half of his body. The integuments and lymphatic glands and vessels of the left side were tender to the touch, and a deep-seated soreness, corresponding to the distribution of the glandular system in the left thorax, was complained of. During the two succeeding days the symptoms did not vary much. On the next day the disease seemed to have arrived to its greatest degree of activity. The patient was delirious, and the integuments of the left side, particularly from the axilla to the pelvis, assumed the appearance of erysipelas, and were somewhat swollen, hard and painful to the touch. In the course of this day the strength and vital powers began to give way, and on the next, October 6, the prostration was very great, attended by almost constant delirium. During the night a general tumefaction of the whole body was noticed, and before morning the bowels became much swollen. This swelling of the body continued to increase during the next day, Oct. 7, and by 4 o'clock, P. M., when Dr. F. saw him for the last time, the bowels had become enormously dis-

tended, the whole body and limbs greatly tumefied, and the cutaneous surface had assumed in every part a bluish mottled appearance. The patient was then in a dying state, and in two hours expired.

In conclusion, it should be observed, that Dr. Noyes and Mr. Mason, both of whom assisted in the autopsy, have experienced no trouble. Neither of them had any wound in the hands.

The two cases now reported present a number of interesting points.

1. They confirm previous observation respecting the danger which attends the autopsy of one dead of puerperal fever, and prove that the body examined must have yielded a most virulent poison.

2. That this poison may be absorbed into the system through the medium of small wounds, such as small, unnoticed hang-nails, and dry scabs covering burns.

3. That it is not absorbed into the system through the medium of a healthy and sound skin, or of the lungs during respiration.

4. That the poison seeks and spends itself primarily on the glandular system.

5. That the system may be affected by the poison both constitutionally and locally, as in the case of Dr. Whitney; or constitutionally only, as in the case of Mr. Hackett.

6. That the disease induced has its period of excitement and prostration.

7. That when the poison occasions a local inflammation, resulting in suppuration and a discharge of matter, the vascular excitement is modified and the chance of recovery increased.

Nov. 28th, 1842. Dr. HENRY G. CLARK reported the following case of premature induction of labor without rupture of the membranes.

Mrs. S., æt. 30, from St. John, N. B., consulted me in May last; she was pregnant with her sixth child, and had always great difficulty in labor, only one of the five having been born alive, and that at 7 months, a female, now living, and 10 years of age.

I had myself attended in her fourth confinement in 1837. I then found her to have a pelvis contracted in its conjugate diameter to less than 3 inches, by the projection of the promontory of the sacrum. She is short, of awkward figure, and has also lateral curvature of the spine. It became necessary to resort to perforation of the head at that time—delivery being otherwise impossible.

At her last confinement, two and a half years since, she went to her native town, where, she informs me, it was thought proper by her attendants there, after three days sickness, to have recourse to the same measures. She did not recover from this for some months.

It seemed to me that this was a proper case for the induction of premature labor. I therefore proposed it to her as the safest course for herself—

as the only one for the child. She readily consented to submit to this or any other procedure which might be deemed necessary.

Nov. 22d. Dr. Townsend saw her this day in consultation, and confirmed my opinion.

I proposed to myself the following method, viz. 1st, to remove the viscid mucus which is found about the cervix uteri, and to dilate and irritate the parts moderately by the fingers, at certain intervals, until some effect should be produced. In addition, if this should not be sufficient to bring on the first stage of labor, to use the ointment of belladonna, and 2dly, as soon as this should be accomplished, to exhibit, at regular periods, small doses of ergot to *excite* natural uterine action.

The last menstrual period was passed March 25th, so that she had now progressed nearly eight months.

This morning, ordered a brisk cathartic. In the evening I called again and made an examination. The finger was insinuated into the os uteri, and the secretions thoroughly removed. Considerable pain was excited by this operation, which continued at intervals for an hour, and then ceased.

Nov. 23d, 9 A. M. Patient slept well all night, and has no pain to-day. Upon examination, the os uteri was found to be more relaxed than last night, and readily admitted two fingers to be passed to the membranes. They were retained there, and the dilatation persevered in for 15 or 20 minutes. By this manipulation, two or three slight but distinct propulsive pains were produced. Pain continued after this more or less for three hours, but with no further bearing down. 10 P. M., os uteri more dilatable, and accompanied with some shortening of the cervix. Membranes easily felt, and, by the ballottement, what I suppose to be the head of the child.

The dilatation now seemed to be sufficient to warrant the exhibition of the ergot—ten grains were accordingly given in decoction.

24th. Patient reports violent pains in the back, loins and hips all night. None in abdomen. These pains have now abated and she is quite easy. Dilatation increased a little. Directed her to rest until 2 o'clock, and then to take 5 grains of ergot, and to repeat the same dose at 5 P. M. Regular propulsive pains came on at 6 o'clock, and continued until the labor was safely accomplished at 1 A. M. The infant was a lively boy, weighing 6½ lbs. The waters were not discharged until a little after midnight. The head, notwithstanding its small size, and in spite of remarkably strong pains, was firmly lodged in the narrowed upper strait for an hour and a half after the os uteri was well dilated, and showed marks of severe treatment during its passage. It was not at all ergotized.

Dec. Mother and child well.

In this case I believe either of the methods usually practised would have been unsuccessful. If the membranes had been ruptured at first, the head

would have fallen early into the upper strait, and the child fallen a victim to its fatal compression there.

If ergot alone had been given, either the object would not have been accomplished, or some grievous injury might have been inflicted on the mother. It is a very good rule in natural labor, "not to give ergot until the os uteri is well dilated." How much more should it be observed in these cases where *no* effort of nature has been made, and where labor has not even commenced!

At any rate, the method adopted in this instance seemed to produce results nearly allied to those produced by nature herself, in carrying forward the same operation at the fall period.

DEC. 26, 1842. Dr. D. Humphreys Storer reported the following case of retained placenta, followed by perforation of the uterus.

Cases in which the placenta is retained in the uterus for *several hours* after natural labor are of common occurrence, and few physicians can be found with an extensive practice who have not repeatedly met with cases where *days* have passed without the secundines being expelled. A great number of instances have been enumerated in the journals during the last few years, to show that the constitution does not *necessarily suffer* by their not being removed; that they are eventually thrown off in fragments, which gradually separate from the mass; or are preserved by the injections thrown into the uterus, and come away entire; or are absorbed; or are even retained until a succeeding pregnancy, and follow the placenta of that fœtus. So often are these cases met with in our *studies*, that we might allow them to quiet our anxieties in *practice*, did we not occasionally encounter cases, which, with all our attention and effort, aided by the advice of our brethren, cannot be successfully managed. Some of the members of the Society may recollect that a year or two since I reported a case of *tetanus* following a retained placenta. In that case there was not the slightest symptom of *peritonitis* nor *metritis*, so far as could be discovered without a *post-mortem examination*.

Since the last meeting of this Society I have met with another case terminating fatally, dependent upon a retained placenta. In this case there was well marked *puerperal peritonitis*. As the *history* was interesting to me, and the post-mortem appearances were different from those presented in any case I have been able to find recorded, I will concisely relate them.

On the 7th instant, at 5, A. M., Mrs. G., aged 21 years, after a labor of a few hours, was delivered of her first child. It was very small, and I should judge not to be more than eight months grown.

The uterus contracted well, but the placenta not being readily detached, I examined and found it firmly adherent, high up, to the uterus. After

waiting several hours for its expulsion, I made an unsuccessful attempt to remove it by the hand. A small portion only was brought away. During the evening of the first day, my patient was seen by another practitioner, who also attempted to remove the placenta, with no greater success than myself, he being able to remove only a small portion, of the size perhaps of an *olive*. For the three first days my patient's symptoms caused me no alarm. During this period I administered ʒi. of ergot, in divided doses, and gave a cathartic of castor-oil. The lochia appeared, and continued to flow, and her breasts secreted milk. No pain nor difficulty was complained of—and although I visited my patient morning, noon, and evening, of each day, it was with the hope of learning that the placenta had been thrown off, and not with the expectation of finding her more sick.

On the morning of the 10th inst., the commencement of the fourth day, I found the *pulse* had risen from 84 (which they were at 10 o'clock the previous evening) to 140. The *abdomen* was tympanitic, and pressure upon it produced considerable uneasiness; while *distinct pain* was caused in the uterus by the application of external force. The lochia and milk had disappeared, the respiration was hurried, and the countenance was distressed.

Here was *peritonitis*—but how should I proceed? As in ordinary cases of this disease? What would be gained by *general bleeding*? The irritating cause would still be in the uterus, however much temporary benefit might be produced. I was unwilling to act alone—and Dr. Channing, in a few moments after my morning visit, saw my patient with me. He examined the uterus, but could remove nothing. After carefully investigating the case, he suggested the application of 10 leeches over the region of the uterus, a hot Indian poultice to the remainder of the abdomen, and the continuance of injections of chloride of soda, which had been previously used, into the vagina. She seemed relieved during the afternoon—a Dover's powder was exhibited at night. In the morning she was decidedly better; the abdomen was less affected by pressure, and was less swollen; the pulse had fallen to 100; she had slept and perspired freely during the night. At noon of this, the 5th day, she was still more relieved, and could I have forgotten that the placenta was still in the uterus, I should really have felt that my patient would yet do well. In the afternoon of this day her pain gradually returned, and during the night it was mitigated only by opium. On the morning of the 6th day I found her in the greatest distress; the pain was intense. The tympanitis had greatly increased, and the respiration was labored. During the whole forenoon of this day she suffered from constantly returning pains, after a longer or shorter intermission, which increased in their severity until they could scarcely be borne. These pains might readily be mistaken by a by-stander for labor pains. In the

afternoon of this day her pains suddenly ceased, and did not again return; the distension of the abdomen increased, the respiration became more labored, the pulse rose to 160, and she died the next evening.

Upon examining the body after death, the fundus of the uterus was found to be in a state of ulceration, and projecting through it into the abdominal cavity, was seen a large portion of the placenta—the remainder still being contained within the cavity of the uterus. The body and neck of the uterus were not disorganized.

The results of the two cases I have repeated to this Society show how great are the dangers to be feared from a retained placenta. In both cases I followed the advice of Blundell, and the dictates of my common sense—"to leave the placenta in the uterine cavity if it could not be removed without the risk of bruising or lacerating the uterus: not because it is not an evil to leave it there, but because to leave it in the uterus is a smaller evil than to abstract it with violence, and we had better abide by the smaller evil than expose ourselves to the greater evil, that of lacerating, bruising and killing."

And in both cases the results were peculiar, and I feel could not have been averted.

In the former case *tetanus* ensued.

In the latter case, after the placenta had been retained for three days, attached to the fundus of the uterus, inflammation commenced—the parietes of the fundus became disorganized, and (probably on the 6th day) during a succession of severe uterine pains, gave way, and the placenta was partially protruded through them into the abdomen.

FEB. 13th, 1843. *Painful Crepitation of the Tendons*.—Dr. J. Mason Warren stated that he had lately met with an affection which he had not seen described in any of the English surgical works; it has been treated of by Velpeau under the name of "*Crepitation douloureuse des tendons*," and is a disease of some practical interest. The case was as follows. The patient was engaged in arranging some window curtains. While standing on the top of a flight of steps, from a sudden jerk her foot slipped, and the hand was caught in the curtain-rod, flexing very powerfully the wrist with the whole weight of the body bearing on it. At the instant she felt a slight snap on the lower and back part of the arm near the wrist. This was followed by considerable pain and swelling, and she was supposed to have met with a fracture of the radius. Dr. W. saw her the day following. At this time the following appearances presented. On the back part of the arm, just over the head of the radius, was a small swelling, a little red and painful on pressure. By placing the finger on the prominence and flexing the hand, a distinct crepitus was perceived, which at first might be taken

for the grating of bone, but on a little examination was at once perceived to be quite different, being a more dry and distinct sound, somewhat similar to the rubbing together of coarse brown paper, and compared by M. Velpeau to the sound which we hear from the rubbing together of inflamed serous membrane, the pleura for instance. The sensation is at first quite startling, and is distinctly perceived by the patient, and when once discriminated by the surgeon, is not easily to be forgotten. In the present case the greatest crepitus was heard, and the most pain caused to the patient, when the thumb was flexed.

A number of explanations have been offered as to the cause of the crepitus. The most reasonable, and undoubtedly the true one, is that of Velpeau, which is the friction of the tendon against the dry synovial sheath, its fluid being absorbed by the inflammation consequent on the injury. Somewhat a similar grating sound is often perceived by moving the patella in a certain stage of synovial inflammation of the knee joint.

The disease is most frequently found in persons whose occupation produces a great strain on the joints, such as blacksmiths, stone-cutters—also in washerwomen it is caused by twisting the clothes. It occurs in the ankle as well as in the wrist joints. The disease yields to treatment in about 10 or 14 days, as in the present case—no pain or crepitation being perceptible after a fortnight.

Osteo-Sarcoma of Lower Jaw.—Dr. J. Mason Warren exhibited a tumor of the lower jaw bone which he had removed a day or two before. The history of the case was as follows.

The patient was a young man, 24 years old, a seaman, and of a healthy constitution. Thirty months since, without any appreciable cause, a small hard tumor made its appearance on the lower side of the angle of the jaw of the left side. This tumor gradually increased, extending itself equally in every direction. At the time of the operation the tumor was the size of an egg, comprising that part of the jaw situated between the angle and the second incisor tooth, and extending half way up the ramus of the jaw. The operation was performed by making a semicircular incision from over the condyloid process to the middle of the symphysis—joined by a descending incision from the lip. The flap was now dissected up, the jaw partly sawed through before and behind, and the division completed with the cutting forceps. The tumor was then dissected out, the masseter being divided at the height of the division of the bone. The inferior maxillary artery, the facial, and an artery of the flap, required ligatures. After waiting some time for the leakage of blood to cease, the lips of the wound were brought together by a number of sutures, and the patient being a little faint, was placed in a horizontal position. In the course of about 15

minutes, a stream of blood was found to be issuing from the mouth. The wound was immediately opened, and a most serious hemorrhage commenced—the blood appearing to issue in jets from almost every part of the wound, and as fast as one artery was tied, another of considerable size required a ligature. About 20 ligatures were applied before the hemorrhage was arrested. The wound was again brought together, and the patient is now doing well.

The tumor removed was about the size of an egg, its parietes elastic, and on being cut into, were found to be about two lines in thickness. The cancellated structure of the bone was much hypertrophied, and filled with small reddish granulated bodies, presenting that semi-malignant appearance often seen before the disease has broken through its bounds and implicated the surrounding soft parts. In the present instance the adjacent structures were perfectly healthy.

Extracts from Foreign and American Journals.

ANATOMY AND PHYSIOLOGY.

On the Composition of Fibrin.—The following conclusions are drawn by M. Bouchardat from some important experiments :

“ 1st. Fibrin, when separated from fatty matter, is composed of three proximate principles in variable proportions ;—a substance identical with pure non-coagulated albumen, for which I propose the name of *albuminose* : this fluid albumen is imprisoned in a network of a tissue composed of *gelatine*, and of a principle possessing all the properties of the epidermic formation, for which, on this account, I propose the name of *epidermose*.

“ 2d. The fundamental principle which we find in the albumen of the egg, in the serum of the blood, in the gluten of the cerealia, and in the caseum of milk, is always identical ; it is albuminose mixed or combined, sometimes with earthy matter, as phosphate of lime and magnesia ; sometimes with alkaline salts ; sometimes with fatty matters ; which extraneous substances mask its essential properties. When, by the operation of an almost unappreciable portion of acid, we have destroyed this transient combination, the solution of albuminose possesses identical properties, exerting precisely the same chemical reactions, having the same influence on polarized light, and possessing an energy (other things being equal), exactly proportionate to the quantity of the substance dissolved.”

This last statement may, we believe, be accepted with truth ; since it bears a very close correspondence with the results of the analogous experiments of Mulden and other German analytical chemists. And with respect to the former, we do not see any ground for hesitating to accept the conclusion of M. Bouchardat, that gelatine exists in small quantities in the blood ; and that its amount is much increased in certain pathological conditions. That gelatine exists in the blood has always been considered probable ; especially since our increased knowledge of the chemical relations subsisting between gelatine, fibrin, albumen, &c., has made it almost certain that the gelatine derived from the food cannot be converted into an albuminous or fibrinous tissue, but can only be employed for the nutrition of the gelatinous tissues. (See Vol. XIV. p. 510.) That a substance resembling the horny matter of the epidermic tissues, also, should exist in the blood, appears quite consistent with our previous views ; since the elaboration of this matter, like that of fat, may be regarded as holding a middle place between the functions of nutrition and secretion, and as probably taking place in the blood during its circulation. By a reference to the comparative table of the constitution of the different proximate principles, which we extracted in our last volume (p. 513), from Liebig's work, it will be seen that the epidermic substance does not depart so widely as gelatine from the composition of fibrin, albumen, &c. ; so that its elaboration from them may be a very simple process.

We can by no means assent, however, to the view of the nature of fibrin

which M. Bouchardat seems desirous of founding upon these experiments, namely, that in the clot of blood there is a network composed of gelatine and epidermose, imprisoning fluid albuminose. It is to be remembered that most of his experiments on this subject were made on the buffy coat; and these cannot be regarded as affording sufficient ground for such a conclusion in regard to the ordinary crassamentum. We have always held that fibrin differs from albumen more in its *vital* properties than in its purely chemical relations; and we see no reason to alter our opinion. Fibrin we believe to be albumen in process of organization; that process is continually taking place in the living body; and the constant withdrawal of the fibrin for the nutrition of the tissues is compensated by a conversion of fresh albumen into fibrin. The process is seen distinctly in the gradual organization of coagulable lymph; and the ordinary coagulation of the blood appears to us a step in the same process, which does not go further because the blood is not in contact with a living surface. A precisely analogous series of gradations is noticeable in plants, where *gum* answers to the *albumen* of animals; whilst the *fibrin* is represented by the peculiar glutinous substance contained in the elaborated sap, which is evidently the pabulum from which the old tissues are nourished, and the new ones formed. To deny the distinct existence of fibrin, as such (which M. Bouchardat seems inclined to do), is just as unphilosophical as it would be to deny the existence of muscular fibre as a distinct substance, because, in its purely chemical relations, it may correspond with the albumen of the egg, or the gluten of wheat. Moreover, there is a total absence of proof that anything like the gelatinous or epidermoid tissue, described by M. Bouchardat, really exists in the blood; on the contrary, we believe it to be yet undetermined whether gelatine is ever organized at all, or whether both it and the epidermic substance are not deposited in cells composed of fibrinous tissue, as fatty matter is well known to be. Further, it is well known (especially through the inquiries of Mr. Gulliver) that the fibrinous clot is hardened by long boiling, and that the fibrous appearance it presents becomes more distinct; precisely the reverse would be the case, if the areolar tissue were composed, even in part, of gelatine. In what relative condition the three principles,—namely, the true fibrin, the gelatine, and the epidermose,—exist in the crassamentum, remains a subject for future inquiry, in which microscopical and chemical investigations must go hand in hand. The great increase of gelatine in the blood, during inflammation of the gelatinous tissues, and the corresponding increase of the colorless corpuscles, naturally suggests the idea that the two phenomena may be in some degree related.—*Br. & For. Med. Rev. from Comptes Rendues*, 1842.

PATHOLOGY, PRACTICAL MEDICINE AND THERAPEUTICS.

Account of a Disease which affected a large number of Persons in the Canton Zurich, and which was induced by partaking of Decayed Meat. By Dr. SIGG.—On June 10th, 1839, a musical festival was held in the church at Andelfingen, to which persons resorted from all parts of the canton. In the church the air was extremely hot, and the atmosphere out of doors was oppressive, and the clouds were heavy, and threatened a thunder

storm. After spending four hours in the church, between 500 and 600 persons sat down in an outhouse, which had been fitted up for the occasion, to a dinner of cold veal, ham, and salad, with indifferent wine and beer. The meat did not look good, and the ham had such a strong taste that many persons did not partake of it, though most made a hearty meal.

On their way home many were taken ill and vomited; on the following day many more were attacked with nausea, vomiting, and diarrhœa, and within a week or ten days, most who had borne a part in the festival became more or less seriously indisposed. Of the 600 persons who had partaken of the dinner, 444, or more than two-thirds, were attacked between the 10th and 20th of June, of whom nine died with typhoid symptoms.

Those persons who had vomited on their way home from the festival, suffered but little subsequent inconvenience; the others were mostly seized from the 5th to the 10th day after it, with sense of uneasiness and exhaustion, with pains in the limbs and head, slight rigor, loss of appetite, with great thirst, and an extremely unpleasant coppery taste in the mouth. Nausea, with vomiting and diarrhœa, were extremely common, and notwithstanding their sense of exhaustion, the patients were unable to sleep, but walked listlessly about, or threw themselves on the ground to rest.

After these symptoms had lasted about seven days, they increased in severity; the fever ran higher, the pains in the head were more distressing, and the patients were compelled to keep their bed. Colic-pains came on in the abdomen, and the epigastric region was frequently extremely tender. At this stage of the disease constipation usually existed, but sometimes diarrhœa came on, in which the patients passed six or eight dark green and highly offensive evacuations in the twenty-four hours, by which they were greatly exhausted. Delirium often accompanied the evening exacerbations of fever, during which the patients were extremely restless, and often violent, but about the 12th day they usually sank into a torpid state with predominance of the typhoid symptoms, while it was only on touching the abdomen that they seemed to be suffering pain. Symptoms of oppression at the chest generally supervened from the 14th to the 17th day, and were attended with cough and slight expectoration. This occurrence seemed to mark the third stage of the disease, and was usually accompanied with the gradual subsidence of the abdominal symptoms. Moisture appeared at the edges of the tongue, the skin began to perspire, and the patients gradually advanced towards convalescence. No discharge occurred which could be called critical, but the cough and fever usually subsided together, leaving the patient in a state of great weakness. In the cases which terminated fatally, the typhoid symptoms of the second stage increased in severity, the abdomen became tympanitic, the stools were horribly offensive, and often mixed with blood, the weakness of the patient became extreme, and fainting-fits were frequent, till death at length took place.

A post-mortem examination was made in four cases. The membranes of the brain were found congested, and a considerable quantity of bloody serum escaped from the cut surface of the lungs. The heart was flabby, but its muscular substance did not appear altered. The most important changes were found in the lower part of the ileum, which was red externally, and on laying it open the mucous membrane was found of a dark red color, in patches, very friable, or if the disease were further advanced,

presenting patches of ulceration varying in size from that of a mustard-seed to a fourpenny-piece.

The writer enters into a long examination of the causes of the disease, far too long to admit of condensation here. It appears, however, to be clearly referable to the meat of which the persons partook, none having suffered who ate only bread and cheese, or butter, while persons who were not present at the festival, but who partook of the meat at their own homes, were affected. The animals appear to have been healthy, and their flesh seems to have been perfectly good when they were first killed, but to have become tainted by being kept for some days, after it was cooked, in an ill-ventilated cellar, while the hams were originally but imperfectly cured.—*Br. & For. Med. Rev. from Hufeland's Journal, May, 1841.*

On the employment of large Doses of Sulphate of Quinine in the Treatment of Typhoid Fever. By M. SAINT LAURENT.—Trials of the virtues of this remedy have been made at the Hopital Cochin by M. Blache, who was led to form a conclusion favorable to its employment in cases of typhoid fever. The cases, however, in which it was used were not numerous, and in some of them other remedies were given either before or in connection with the quinine. M. Broqua, of Plaisance, who first introduced this practice, coming to Paris, induced M. Husson to permit some of his patients at the Hopital Cochin to be subjected to this mode of treatment, and the results thus obtained are published by M. Laurent.

The dose of the medicine was usually ten centigrammes every hour; sometimes the dose was larger and administered less frequently; and in several instances the patients took more than 3ij. in every twenty-four hours for many days together. In thirteen cases no other remedy than the quinine was administered, but though the patients recovered, yet the results do not show any great superiority in this over other methods of treatment. In no instance were the symptoms cut short at once by the quinine, while in several cases the increased headache and thirst, and the greater dryness of the tongue which followed its use, were not only of importance in themselves, but rendered the cases more complicated, since it was not easy to tell how far those symptoms were produced by the medicine, or how far they betokened an aggravation of the disease. Of ten patients who had the disease mildly, all recovered but one, whose death M. Laurent attributes, apparently with justice, to the action of the quinine. Of three patients who were attacked by the disease in a severe form, one only recovered, and even he was for some time in a state of great danger, owing to hemorrhage from the intestines.

The cases are detailed in full, and are not by any means such as would impress one with a favorable opinion of the treatment proposed by M. Broqua. M. Laurent adds that M. Broqua is accustomed to administer the quinine in cases so slight that the patients would recover even though no treatment at all were adopted, and that if M. Husson had consented to its employment in such cases, the number of reputed cures from the sulphate of quinine would have been far greater.—*Br. & For. Med. Rev. from Archives Générales, Sept. 1842.*

SURGERY.

Subcutaneous Tenotomy not a New Thing.—In the “*Ars Chirurgica, a Compendium of the Theory and Practice of Chirurgery*, by W. Salmon, living at the great house by Black Friars Stairs, London,” and published 1698, we find the following complete description of this modern operation. After describing the nature of wry neck, how it may arise from contraction either of the sternal or clavicular portion of the sterno-mastoid, as also the “old butcherly way of cure which puts the patient to great pain and danger,” we have

“The cutting of a wry neck, by a new way without the hook. Here you must strongly take hold of the *chord* with your thumb and forefinger, with which feeling for the vessels (chiefly the *jugular vein* whose approximate is the *recurrent nerve*), you must carefully thrust it by; then having fast hold of the *chord* with your thumb and finger, you must warily thrust in your incision knife, as it were beyond the chord and just above your fingers; then making the patient hold up his head, the chord will be cut asunder, the outward skin remaining whole. Thus will the work be done with no more but a prick appearing outwardly, and the wound will be well in about twenty-four hours, without any effusion of blood.”

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

Obstetrical Statistics in the Electorate of Hesse, by Dr. Schrieber.—From the accounts furnished from the clinical obstetric hospitals of Fulda, Marbourg, Dresden, Paria, Wurxbourg, Vienna, Berlin, and Breslau, it would appear that one operation is practised on a mean of 13 deliveries. At Vienna, the smallest number, 1 in 75; and at Berlin, the greatest, 1 in 6.3 to 6.8. At the hospital at Marbourg, in 1833-4, one operation for 15 deliveries; whilst taking the whole electorate of Hesse, during 1836, 7, and 8, the proportion was only 1 in 38. Hence it results, that the proportion of obstetrical operations performed throughout a whole province, that is, in private practice, is less than in hospitals; the same holds true as regards the city and the country. Thus in the cities of Hesse (Cassel and Hanan), one operation is performed in 17.9 deliveries, and in the country 1 in 95.

Cæsarian Section.—In the reports of the above-mentioned hospitals, this operation is to the others as 1 to 84; in the electorate of Hesse as 1 to 142. In the Berlin hospital it was performed once in every 256 cases, and thrice after death of the mother. In the electorate of Hesse, in 76,417 cases, it has been performed once on the living, and eleven times on the dead body.

Perforation.—In the Berlin hospital, with other operations, the proportion is 1 to 64.4; in Hesse, 1 to 74.

Turning.—By the head, in the Berlin hospital, once in 75 operations, and in Hesse once in 63. By the feet, once in 9 operations, in all the hospitals; once in 5, in that of Berlin; once in 32, in Hesse. There appears a remarkable difference between the number of cases where turning was performed between the country and city; on a mean, turning is per-

formed once in 103.2 cases, in Cassel and Hanan, while in the open country, immediately surrounding these towns, it is only once in 2068.

Application of the Forceps.—Once in 1.9 operations, in all the hospitals; once in 2.1, in Hesse. Once in 67.9 cases, in the cities (Cassel and Hanan), and once in 283 in the country.

It is evident, therefore, that in the large cities, and still more in the hospitals, there is much more resort to operations than in the country, where the physician is often at a distance, and where the friends dread the expense of an operation, and trust more to time and nature.

Forced Delivery.—Once in 28 operations in the hospitals; once in 80, in that of Berlin; and once in 313, in Hesse.

Extraction of the Placenta.—Once in 6.6 operations in the hospitals, and once in 5.7 in Hesse. As a general rule, three or four times the more operations are performed on women with their first children. The mortality consequent upon these operations, for the mother is 1 in 14.9 operations in the hospitals, and 1 in 15 in Hesse; for the child, 1 in 3.4 in the hospitals, and 1 in 2.4 in Hesse.—*Encycg. des Sci. Med. from Neuzeitshrift fur Geburtskunde.*

Case of Metastasis of the Milk. By Dr. RASI.—Ancilla Bassi, a robust peasant, æt. 27, nursed her child with much perseverance, although the nipples were from the beginning much chapped. Dr. Rasi prescribed weaning. Soon after, in consequence of divers imprudences, the secretion was arrested; at the same time she was attacked in the joints of the lower extremities with pains accompanied with fever. These were considered rheumatic, and an appropriate treatment directed. The joints, although painful, were neither reddened nor tender, which caused of course some doubt as regards the nature of the affection, when on the 17th day, after a general perspiration, the whole body was covered with a whitish miliary eruption; at the end of thirty hours this had become vesicular, the vesicles attaining the size of a lentile. This eruption lasted seven days, and a large quantity of the contained fluid was collected, bearing the most striking resemblance to milk.

A chemical analysis, by Sig. Muratori, gave the following. A white, opaque, odorless liquid, of a density greater than water, slightly reddening litmus paper, not coagulable by acids, and forming, with sulphuric ether, white flakes, which separated, and treated by the dilute chlorohydric and acetic acids, were perfectly dissolved, thus establishing their complete resemblance to human milk.

A portion left at a rest in an open vessel, separated into three distinct layers, the upper of a yellowish white, unctuous to the feel, almost completely soluble in sulphuric ether, and saporifiable with caustic potass. The middle layer had the appearance of milk dissolved in water, and resembled completely the first milk secreted. The lowest one, adhering to the bottom of the vessel, resembled cheese, white, opaque, slightly acid, not oily to the feel, soluble in the chlorohydric and acetic acids.

A third portion was evaporated to dryness, and after calcination in a platinum crucible, upon analysis presented the sulphates found in human milk.

*Dr. Pollini, also, with the aid of the microscope, established its complete resemblance to human milk.

Case of Tubarian Gestation, with Rupture of the Cyst containing the Embryo, &c. By R. M. GLOVER, M.D.—The subject of this case was aged 39, of stout habit; she had been married for the second time for three months. Since her marriage she had not menstruated, though previously she had been regular. During her first marriage she had three miscarriages, but never bore a viable child.

On the 30th of November, 1841, she complained of bearing-down pains in the back and abdomen, with slight bloody discharge from the vagina. On examination, the lips of the uterus were found rather tumefied, but close. The pulse was but little affected, the tongue clean. A gentle aperient and anodyne draught were administered, and the pains ceased. In the afternoon of the next day she had a similar attack, when the same treatment was renewed with equal success. This time a few fibrinous shreds were passed with the bloody discharge, which was very slight.

At 3 P. M., on the 2d of December, she was suddenly attacked with excruciating pain in the lower part of the abdomen. When seen by Mr. Dixon, she was in a state of collapse, extremities cold; rigors; lower part of the abdomen extremely painful on pressure; pulse about 80, scarcely perceptible; tongue clean. On examination, per vaginam, the lips of the uterus were found less tumid. A draught of laudanum and ether was ordered. Soon afterwards she had severe vomiting, a watery fluid being ejected from the stomach with great force. In the evening, when examined by Dr. Glover, in consultation with Mr. Dixon, she remained in much the same state. The abdomen was every where painful on pressure, especially inferiorly, where it had a doughy feel; superiorly, there was some tympanitis. Great pain was especially felt over the iliac fossæ. There was now no discharge from the vagina. The pupils were dilated, and the patient in a state of partial stupor.

The symptoms of depression continued to augment, she lay during the next day in a state of insensibility, and died at 6 P. M.

Post-mortem appearances.—No external sign of pregnancy was observed.

On opening the peritoneum, a large clot was perceptible, occupying the space from the umbilicus in front downwards into the pelvis. The intestines exhibited some traces of inflammation. The pelvis and the iliac regions and posterior part of the abdomen contained a quantity of dark-colored fluid blood, estimated at about two pounds, while the clot might weigh three-quarters of a pound. No ruptured vessel could be detected, but a sac of the size of a walnut was found where the left Fallopian tube joined the uterus; its interior surface communicated with the peritoneum by an irregular shaggy opening, and by adherent clots, which could be pulled from openings resembling those of veins. The uterus and its appendages were carefully removed and examined subsequently.

The uterus was somewhat enlarged, and its lips slightly tumefied; on being opened, it was found to be lined by the decidua, apparently of very recent formation, to within three or four lines of its orifice. This membrane was red, soft and spongy, and terminated towards the mouth of the uterus by a somewhat elevated margin, which may be described as composed of striæ. Air could be injected from the right Fallopian tube into the uterus, but not from that of the left side, nor from the uterus into the cyst already alluded to. The left Fallopian tube was clearly connected

with this cyst, although impervious about four lines above it. The cyst has been already sufficiently described.

The left ovary was much shrunk, and a hydatid was observed attached to it. On its outer surface was a recent cicatrix, in which a minute dark clot could be observed. Near this, on section, two corpora lutea could be observed. The ovarian extremity of the left Fallopian tube was very open, and beautifully fimbriated.

The right ovary displayed two corpora lutea, and several Graafian vesicles.

Remarks.—Notwithstanding that the embryo was not found, in this case, being probably contained in the huge clot, there can scarcely be a doubt entertained of the nature of the case; and this being granted, the chief remarkable circumstance with regard to it is, the *early period* of gestation at which rupture of the sac took place.

In general, rupture of the sac in case of tubarian pregnancy takes place towards the third month. From the size of the sac in the present case, and the absence of marked symptoms of pregnancy, together with the recent formation of the decidua and state of the uterus, Dr. Glover would be inclined to consider the pregnancy as not more advanced than three weeks. It is by no means improbable that parallel cases are more frequent than is supposed.—*London and Edin. Monthly Jour. Med. Science.*

Hints on the Management of Infants.—There is so much good sense in a great part of M. Donné's work that we have been tempted to make several extracts from it, or rather to put upon paper our own ideas on the same subjects, and blend them with those of our author. There may be no novelty in them; but they are not for this reason the less useful.

Let us, for the present, take one point connected with the *feeding of infants*.

Whatever be the age of the infant, it is always of great utility that the food be given at regular periods, as nearly as possible equi-distant from each other, so that the stomach of the young creature is neither left too long empty, nor oppressed and unnecessarily loaded. A sufficient interval of time must therefore be allowed to elapse after each repast, to enable it to be digested and then discharged from the stomach before another be given. To put fresh food into the stomach, while it is still more or less filled with what had been taken before, is inevitably to disturb the process of assimilation, by which the food is converted into chyle for the nourishment and growth of the body.

Now this very simple circumstance—so simple that the experience of daily life dictates it, and withal so important that the health cannot be maintained without due attention to it—is, strange to say, very seldom attended to in the rearing of infants. How generally do we observe that, instead of giving food to them only at regular and stated periods, no sooner do they begin to cry, than they are immediately applied to the breast, although perhaps not half an hour had elapsed since they had had it to their little heart's content. It surely needs not the authority of a medical man to assure any one that such a practice cannot be wholesome or right.

We might derive a useful lesson on this point by watching the conduct of the lower animals towards their young. We do not, for example, observe that the cow will allow the calf, or the sheep the lamb, to be tugging

at the teat, whenever the young creature seems to wish it. It is only now and then, and at certain intervals, that they are allowed to satisfy themselves with the "milky food." We may be assured that nearly the same law applies to all animals, and that what holds good in case of the calf and of the lamb, holds good of the human infant also.

In one respect only have the dumb creatures in our fields the advantage over us, and it is this: with them, *instinct*—that truly marvellous gift of an all-wise and beneficent Creator—is an unerring guide, while man's boasted *reason* is, alas! often either asleep, or is leading him astray.

But it may be asked, how often then should the infant have the breast? The following few directions will, we think, suffice to direct our readers on this very important question. The younger that the infant is, the more frequent is the desire and necessity for food. During the first weeks of life, the breast may be given every two hours or so in the day—less frequently at night. As to the quantity which the child should have at each time, the nurse will, as a general remark, find that it may be allowed to continue sucking until it is satisfied. When once this is the case, all that is given afterwards, is only oppressive to the stomach; and it is well known that the little creature usually gets rid of the superfluity by bringing it up. When the child is very weak, it may be necessary to give the milk more frequently and in smaller quantities at a time; but in ordinary cases an interval of about two or three hours should be allowed to elapse between each meal.

The child should, however, seldom be awaked for the purpose of giving food. It is an old saying, that "a sound sleep is almost as nourishing as a full feast;" and the remark is especially true of infants. They require a great deal of sleep, and they are always refreshed by it. As long as a child sleeps, we may rest pretty well assured that Nature does not need any fresh supply of food; and therefore to disturb it merely because the regular period, at which otherwise it would have been applied to the breast, has arrived, is not only unnecessary but hurtful. The exceptions to this remark occur very rarely indeed, and then only in the case of infants who are exceedingly weakly, and who should therefore be regularly seen by a medical man, as no general rule can be laid down that will be applicable to all.

It may be worth mentioning that, in not a few instances, the poverty of the nurse's milk seems to have something to do with excessive drowsiness of the infant. Nature appears to endeavor to compensate for the deficiency of nourishment by an extra allowance of repose. In all such cases, therefore, the medical man should satisfy himself most accurately on this point, more especially when the child is suckled by a hired nurse—who, it may be supposed, always tries to make us believe that her milk is both abundant and good. There is a simple rule, which will very seldom misguide us: it is this: if the child does not thrive properly and yet sleeps a great deal, we may feel pretty confident that the food administered is not sufficiently nutritious, and therefore that some change in the diet is necessary.

The frequency of suckling should be diminished after the sixth or seventh week, or even earlier in the case of robust hearty children. Once every three hours is then quite sufficient, provided the milk be duly nourishing, and the infant be allowed to satisfy its craving at each time. At the end of the third month, the breast need not be given oftener than every

four hours, and so on successively, an extra hour being added to each interval after every additional month or six weeks of life. By following this system, not only is the health of the infant best consulted, but the convenience and comfort of the nurse will be greatly promoted.

How many a mother, from an overflowing affection, devotes almost every hour of every day to watching over her beloved child! She is unwilling to leave her home for even a few hours, for fear of it suffering for want of the breast while she is away. Now this is just one of those errors, which it is the leading object of M. Donné's work to endeavor to get rid of, both for the mother's and the child's sake. If the latter be accustomed from its birth to have food only at stated regular times, it is altogether better in every respect that in the intervals the nurse be away, and the child be left in the care of another person. We have already explained how much the condition of the milk is affected by the state of the general health, and how necessary it is for the maintenance of this, that the nurse should take regular out-door exercise, and that her mind be kept in an equably cheerful state. Now how can these advantages be obtained, if she be continually from morning to night with her child? Another great evil of the nurse being too much with the infant, is that the latter, by the mere smell of the milk being constantly presented to it, is often induced to desire food when it certainly does not require it, and when, therefore, it would be much better without it.

This, it has always appeared to us, is one of the greatest disadvantages attending the nurse being too much with the infant—at least until it has been accustomed not to seek for the breast, except at stated intervals. And Nature is so flexible at this early period of life that this most desirable end may easily be gained by adopting a judicious plan from the commencement.—*Med. Chir. Review, Oct. 1842.*

On the Qualities of the Milk, and the Means of ascertaining them.—We need scarcely say that the old practice of judging of the qualities of a nurse's milk, by looking at a drop of it on the thumb-nail, is not to be depended upon: although some medical men still continue this practice with the view, we suppose, of satisfying popular prejudices.

Milk, we know, consists of several distinct constituent parts; some of them are dissolved like sugar in water, while others are in the solid form, and float through the fluid as minute particles or globules. The *soluble* ingredients are principally, 1, the caseum—the basis of cheese—2, a peculiar sort of saccharine matter; and, 3, various saline substances; the *insoluble* are only of one kind; viz. the fatty portion which produces butter. Milk may therefore be regarded as an emulsion or *looch*, in which the caseum, sugar and salts are dissolved, and the oil suspended through it in fine particles.

These various ingredients cannot be distinguished by the naked eye; but if a drop of milk be put on a watch-glass, and examined with a microscope of about 300 magnifying powers, we shall at once perceive a multitude of rounded, transparent, pearly-looking grains, floating in a limpid fluid: these are the globules of the milk, and it is they which constitute the butter obtained by churning. In pure unadulterated milk, we observe no other substance but these globules; varying much in dimensions, but all having the same general characters. It is therefore to be regarded as an unfavorable circumstance, if there be present any other particles besides the

proper milky globules—such as we find under certain circumstances which we shall presently mention.

The richness, and therefore the nutritive quality, of the milk, is pretty exactly represented by the number of globules which it contains; and in proportion as these abound, so usually does the quantity of the caseum and the sugary matter also.

It is therefore obvious, that the microscopic examination of the milk affords much very useful information; it only requires a little experience in the use of the instrument to satisfy any one of this. The difference between the milks of different women is sometimes most striking; in one there is an immense number of globules, all regular, well-formed, and of a good size; while in the other, they are small, sparse, and look like fine dust diffused through the liquid.

M. Donné assures us, that he has repeatedly compared the results obtained by microscopic examination of milk with those which chemical analysis of the fluid affords, and that they always agreed in their general characters: as a matter of course, there was more numerical exactitude in the latter way, but this extreme nicety is not required for the purposes of practical medicine.

The quantity of cream that forms upon milk is a simple and very useful means of determining its richness; this plan is scarcely applicable in the case of women. The cream is nothing but the coalescence of the milky globules, which, from being lighter than the medium in which they float, rise to the surface. M. Donné says that, according to his experiments, a healthy woman's milk yields about 3 per cent. of cream, while that of the ass gives one or two only, and that of the cow from ten to fifteen, or even twenty. This experiment is easily made with the aid of graduated tubes; but, however useful it may be as an auxiliary means, it should never supersede the employment of the microscope.

The Milk becomes thinner by remaining in the Breasts.—A distinguished chemist, M. Peligot, has shown, by a multitude of ingenious and very satisfactory experiments, that the longer the milk sojourns, after being once secreted, in the breasts, the more thin and watery it becomes. He says, that if the product of one *milking*—that is, all the milk which a cow, for example, yields at one time—is divided into three portions, by being received into three different vessels, the first milk is thinner than the second, and the second than the third, this being the most substantial of all.

This fact, indeed, is not unknown to many nurses, who have observed that the milk that first flows from their breasts in the morning, when perhaps they have not suckled during the whole of the preceding night, is thinner and more watery than what comes afterwards.

Formation of the Milk: the Colostrum.—We have already said that a milky fluid begins to be secreted by the mammæ, long before the birth of the child.

It is found on examination to contain milky globules which are more or less perfectly formed, united together in small masses, or heaps, by means of a mucous matter—and also corpuscles of a peculiar nature, which I have called granular bodies. The composition of this first milky secretion does not alter immediately after delivery, and the colostrum, therefore, does not all at once become perfect milk. It becomes more abundant, it fills the mammæ, but we readily perceive by its yellowish color and its oleaginous appearance, that it is not genuine authentic milk.

The name of *colostrum* is therefore still retained; and it is generally believed to have slight purgative properties on the infant, and thus to promote the evacuation of the meconium.*

If such be the case, it is obvious that those children who are not suckled by their mothers, require some aperient medicine after birth more than those who are.

It is only after the milk fever has passed over, and after the infant has drawn the breast several times, that the mammary secretion acquires its characteristic properties, that it loses the oily and other strange elements, and no longer retains the viscid consistence and the yellow color, which it had at first. Even after the change to true milk has taken place, it will be found with the microscope to exhibit for several days a small quantity of the proper granular particles of the colostrum; the proportion of those gradually diminishes until, about the sixth or eighth day, they are no longer appreciable.

In some women, however, the milk does not lose the admixture of these granular corpuscles for weeks or even months, so that its secretion is never in a state of perfect purity. This condition—which, be it remembered, cannot be detected by the naked eye of the most practical observer—it is very important to ascertain, more especially when we have to select a nurse, for suckling. The following are M. Donn  s observations on this subject.

“The presence of granular corpuscles in milk after a certain period is unquestionably to be regarded as an irregular and morbid condition; for we observe they are produced and become more and more numerous when the health of the nurse is deranged by disease, whether this be general or of the mamma itself. Thus, under the influence of fever, or of an engorgement of the gland itself, the milk, which may previously have been quite free from them, will often be found to exhibit their presence.

The effect of the change is in general very speedily observable on the health of the infant; it exhibits all the signs of being imperfectly nourished; it is puny, peevish, and uncomfortable; the bowels are generally relaxed, and the stools are seldom healthy.”

* * * “The alteration of milk,” adds our author, “by an admixture of the elements of the colostrum, is one of the conditions which will be found to be most generally coincident with the sickly state of infant health.”

Chapped Nipples.—M. Donn   is of opinion that this most troublesome and often most distressing complaint is, very often at least, connected with an altered state of the milk itself. The milk will, in many such cases, be found to be poor and watery, not very abundant, and to contain more or less of mucous matters. The child being imperfectly fed, and finding difficulty in drawing the milk, pulls at the nipple more than usual; and perhaps at the same time its saliva is more saline than usual, and thus contributes to increase the irritation.†—*Conseils aux M  res, &c.*

* The meconium consists in a great measure of the intestinal mucus—the elements of which may be recognized with the aid of the microscope—and also of a certain portion of biliary matter.

† The chapped state of the nipples may be, and we have no doubt is, in many instances connected with some defect in the state of the milk itself; but this is certainly not always the case. The application of the weak solution of the sulphate of zinc, or of the tincture of catechu or kino, immediately after each act of suckling, will often speedily cause the fissures to heal; while the infant has at no time seemed to have suffered from the inconvenience to the mother.

MEMOIR OF DR. DOANE.

THE following memoir has been received from a friend, with a request for its insertion in our pages.

GEORGE BARTLETT DOANE, M.D., the subject of this notice, was born in Boston, in the year of our Lord 1793. The family from which he descended had been merchants for several generations. His grandfather, Elisha Doane, of Wellfleet, had accumulated a large fortune in commerce and the fisheries, having early entered into the whale fishery. "At Wellfleet formerly lived Col. Elisha Doane, who amassed in this spot an estate of £120,000 sterling."* Thomas Boylston, of Boston, whose bequest to his native town secured his name to the public school-house on Fort Hill, and to the school for young children at the House of Industry, and Elisha Doane, of Wellfleet, were estimated by their fellow citizens the two richest men in the province of Massachusetts Bay. Isaiah Doane, the eldest son of Elisha, and the father of George, was educated at Harvard University, where he received his degree in 1774. He became a merchant, settled in Boston, married Hannah Bartlett, of Plymouth, a direct descendant from the Pilgrims, and carried on business largely as a shipping merchant, until British cruisers, at the commencement of the French Revolution, swept his ships from the ocean. A numerous family of children was the fruit of this marriage, viz. five sons and five daughters. George was the youngest of the sons. The loss of fortune, followed by the loss of health, and that again by early death on the part of the father, imposed on the widowed mother a care that called into exercise all the active virtues so characteristic of the pilgrim race. The mother, by example and precept, taught her children self-denial and activity. She gathered up the fragments, put her diminished fortune at nurse, retired to the country in the neighborhood of a good school, and there instructed her children in the lessons of practical wisdom. The widow's God and the father to the fatherless blessed the bereaved household. The unshrinking fortitude of the mother was not unobserved by our young school boy. He strove by diligence to recommend himself to his beloved parent. In 1808, at 15, he was admitted into Harvard University.

* Vol. III., p. 101, Dwight's Travels.

In 1812, at 19, he was graduated—a reputable scholar, in a class that now reflects honor on its Alma Mater. The severe mental labors of the mother in training unaided her numerous children, had impaired her health. The hope of contributing to the reinstatement of the health of his beloved mother, decided the young graduate in the choice of a profession. In the autumn of 1812, he accordingly entered on the study of medicine, resolved to study as a science what might contribute to gratify his ruling passion, filial piety, which sought the renovation of his mother's decayed strength. Although a succession of paralytic shocks experienced by the mother, interrupted his original purpose of becoming the instrument of her cure, still he untiringly devoted himself to the study of the elements of medicine, and never lost the opportunity to do good service at the bedside of the sick. Anatomy and morbid anatomy he studied with unwearied assiduity. His pupilage was filled up with self-denial and continued painful toil. He never flinched from duty while the cry of suffering was heard. Nights has he kept vigil at the bed-side of the poor, who had submitted to painful and perilous surgical operations, while the curative process was commencing. The lack of nursing among the sick poor always imposes heavy labor on the physician and the faithful student.

So decided had been his character as a faithful medical student and upright man, that one of the best educated physicians of his times, detailed on duty as a regimental surgeon to the militia detached for duty at South Boston, during an early period in the last war with Great Britain, selected and recommended him for a commission as his assistant surgeon. This tour of duty, though short, was faithfully performed by the young pupil. The officers of the regiment esteemed him as a gentleman and scholar, while the soldiers loved him as a skilful physician and kind friend. The odor of his good name reached the capital, and at the close of the year 1814, while yet in his pupilage, he received a commission as assistant surgeon in the U. S. Navy. In the spring of 1815, he was ordered to repair to the city of New York and report himself to Commodore Jones, who sent him on board the *Macedonian*, bound to the Mediterranean. On the voyage he writes, "Never was life so divested of all rational comfort as this." After a few days he writes again, "I read, write, and think as well in any situation, although the apartment I occupy is so far below the surface of the sea, that the rays of the sun never penetrate, thereby being entirely shut out from the light of heaven."

July 2d, 1815, he arrived at Gibraltar, where he was appointed acting surgeon on board the *Constellation* until her arrival at Port Mahon. This was the naval station for the American fleet, where a hospital was founded for the sick, to which Dr. M. Reynolds had been appointed as the surgeon, and Dr. Doane as the assistant surgeon. Dr. M. Reynolds had sailed, leaving to Dr. Doane the entire charge of the establishment for several months. On the return of Dr. M. Reynolds, Dr. Doane writes in his journal, "I have been more than three months entirely alone, the only responsible person here, and burdened with every thing, attending personally to every article of provision, medicine, clothing, purchasing and expending, paying all bills, examining all accounts, and at the expiration of every month, making a settlement of every thing, and having also by night and day the constant care of the sick, to prescribe and give all the medicine with my own hand; yet from habitual method, there is no confusion, no irregularity. This is a situation which calls forth and holds in exercise all the energies of my mind. I have also become engaged in quite an extensive practice among the poor, and as I attend them all gratis, between thirty and forty children are brought to me daily. They express much gratitude, and it is impossible to attend on the poor and sick without feeling for them the sincerest compassion. Here the poor never beg, except of God, and of him for patience only."

While on the tour of duty in the Mediterranean, smallpox broke out in the fleet, the cases of which were committed to the treatment of Dr. Doane on board the frigate *United States*, which was selected for quarantine. The sick were sent to the island of Minorca in this vessel. He thus describes in his journal his situation. "I have learned to accommodate myself to disappointment and privation, have entirely discarded from my thoughts all pleasure, and am now influenced by motives of improvement only." He proceeds. "I have now been in quarantine twenty-one days, with thirty-eight men and one midshipman sick of smallpox; many of them have had the disease to a most dreadful degree. I have had the good fortune to lose but three cases. On this island it is fatal to a most desolating extent. I have seen death and disease in all their varied forms, but never did I conceive of any thing so loathsome and disgusting. All disease here seems nothing compared to it; and as Burke says, all the horrors of sickness before known or heard of, seem mercy to this noxious havoc." He subsequently writes, "The sick are nearly all

recovered, and the term of quarantine has nearly expired. Yet, although confined to this small island, I am contented and happy, and find constant occupation with my sick and my studies." When Commodore Decatur, off Cape de Gatt, had crippled and conquered the Algerine fleet, Dr. Doane was ordered on board the Meeshauda, the flag ship of the enemy, to take charge of the wounded. Here his sympathies were well tried. The barbarous custom of inflicting corporeal punishment on criminals by the mutilation of their limbs, had awakened among the Algerines a horror of surgical operations, as badges of disgrace. These brave warriors preferred death to dishonor. Dr. Doane had much to encounter from this prejudice, as those whose mutilated limbs had been amputated reluctantly endured the dressings essential to the cure. With the zeal of an apostle he besought their patient endurance of the necessary treatment, and succeeded in disabusing their minds of their unnatural prejudices. When his kindness and skill had won them back to the love of life, their gratitude was unbounded. They besought him to accompany them to Algiers, where they promised him a life of ease, the great boon of existence in warm climates. Exemption from the necessity to labor, all men covet. In the low latitudes it is the *summum bonum* of human bliss. When the Dey of Algiers had ratified his treaty of peace between the Regency and the United States, dictated at the cannon's mouth by Commodore Decatur, the Algerine fleet was restored. Dr. Doane was then ordered to Carthage, where he remained until the arrival of the U. S. Ship of the Line Independence and her squadron, when he accompanied them in their cruise to Leghorn and Pisa. At the latter place he mentions a valuable Medical Garden, with the following singular inscription on the gate at its entrance. "Enter with the eyes of Argus, but not with the hands of Briareus." The diligence, skill, and urbane manners of Dr. Doane had won for him the love and confidence of all observers. He had acquired a competent knowledge of the French, Spanish, and Italian languages to profit by the new scenes to which he had been introduced. His previous classical education had imbued his mind with a curiosity to see what had been said and sung by the historians and poets of Rome and Greece. His letters and his journal contain graphic descriptions of the interesting objects, both of nature and art, abounding in those countries, exhibiting great enthusiasm in the admiration of the sublime and beautiful. He returned from the Mediterranean in 1819, when he resigned his commission. His brother offi-

cers, under whose command he had sailed, bear testimony to his character in the following language. "Dr. Doane has been distinguished by his zeal, attention to the duties of his profession, and gentlemanly deportment." This is an extract of a letter of Captain W. M. Crane to the Secretary of the Navy, recommending him for promotion as a surgeon. In another letter he writes, "his skill, his correct gentlemanly deportment, secured him the respect and regard of his brother officers. He was several months the acting surgeon of our Naval Hospital at Port Mahon, in Minorca, and gave great satisfaction in the discharge of his duties." This letter is dated Gosport, Oct. 6th, 1820. Capt. John Shaw writes of him, the letter dated United States Ship Independence, Charlestown, Sept. 27th, 1820. "His skill, kindness and humanity were manifested in the arduous duties of an assistant hospital surgeon on a foreign station. The police and general good condition of the men under his charge, reflected credit on his exertions, and draws from me the expression of my high approbation of his official character and services while under my command." In 1820 Dr. Doane submitted to an examination for a degree as Doctor of Medicine, after which he commenced a practice in Boston, his native city. His well known good character had secured him the respect and good wishes of several among the eminent physicians of the town, as shown in a written recommendation, at the head of which stands the name of Samuel Danforth, the patriarch of the Faculty in Boston at that time. Dr. Doane was recommended to his neighbors and fellow citizens as a practitioner of medicine and surgery, and his humanity and skill while in the navy well declared the origin of the recommendation. The following is the concluding sentence in the recommendation.

"Diligence, decorum and integrity have uniformly characterized his manners and habits."

With such preparation and reputation, Dr. Doane did not wait long for opportunity to signalize himself. Two cases of gun-shot wounds fell under his treatment, both very severe, but were successfully treated by the young aspirant after professional fame. In one case a young man had attempted suicide by the discharge of a pistol under his chin, the contents of which passed up through the roof of his mouth and shattered the bones of the nose, as they had passed through that organ. In the other case, the accidental discharge of a rifle had thrown a bullet into the head through the external angle of the eye, without leaving any trace of its direction or

lodgement. The fortunate treatment of both cases secured the young surgeon reputation for skill in the several neighborhoods of their residence. Still, as the general surgery of Boston had been engrossed by his seniors strong in the confidence of the community, Dr. Doane turned his attention to a miscellaneous practice, in which he soon gained the confidence of the people. On the 12th of February, 1821, Dr. Doane was unanimously elected physician to the Boston Asylum for Indigent Boys. A further expression of the confidence of the community in Dr. Doane's professional character may be found in the records of the Trustees of the Massachusetts General Hospital, by whom he was unanimously chosen one of its consulting surgeons in February, 1837. Such were the delicacy of his manners and devotion to his cases, that he early acquired a large obstetrical practice, and practice among children. More than three thousand cases of midwifery are recorded on his books, between the commencement of his practice in 1820 and his death in 1842, which is an average of over one hundred and thirty-five per annum through the entire term. During seven years are recorded one thousand and seventy cases, which makes an annual average of more than one hundred and fifty-two cases. During his last three years of practice, more than six hundred cases are on record, which equals nearly four per week. The extent of his other practice taken into the account, it is a large practice in midwifery, although exceeded by the practice of some of his contemporaries during their most palmy days.

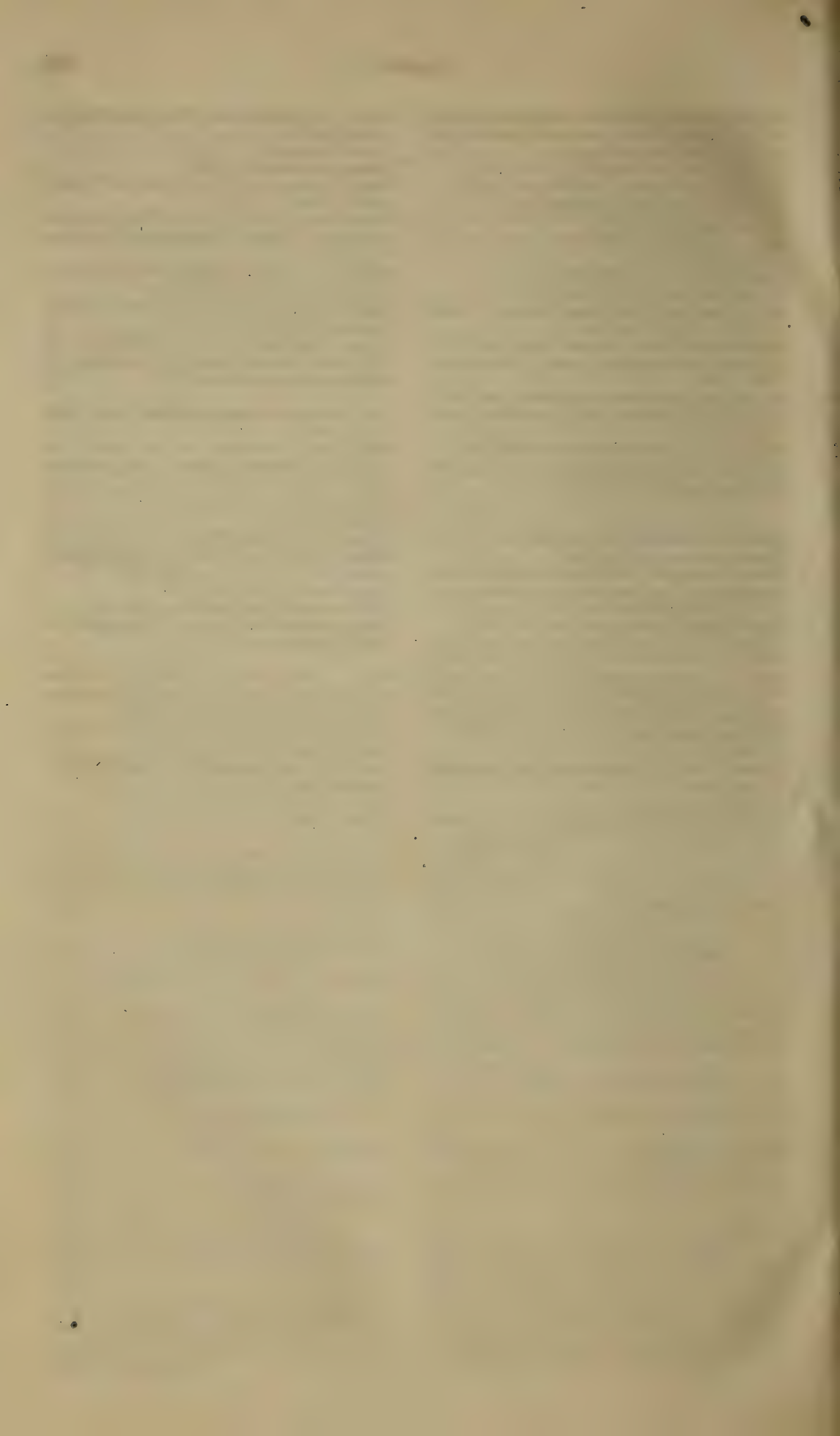
Dr. Doane was never married. His philanthropy, therefore, was more diffusive than otherwise it might have been. His sisters shared largely in their brother's affections, and participated freely in the fruits of his prosperity. The poor, particularly the sick poor, found in him a friend. His time, his labor and his money were freely employed in the effort to alleviate the condition of suffering humanity. His benevolence knew no limits in the effort to aid rising merit, and its onward struggles. So general had been his kindness to all within his reach, that he was universally hailed as a benefactor and philanthropist by his contemporaries. His generous labors literally wore him and broke him down. He visited patients on the very day preceding the night of his death. It is supposed that an affection of the heart, aggravated by unremitting professional toil, might have caused his sudden death. In a paroxysm of dyspnœa he had but just time to alarm a beloved sister, in whose arms he quietly breathed out his life. Medical aid had been summoned, but in vain.

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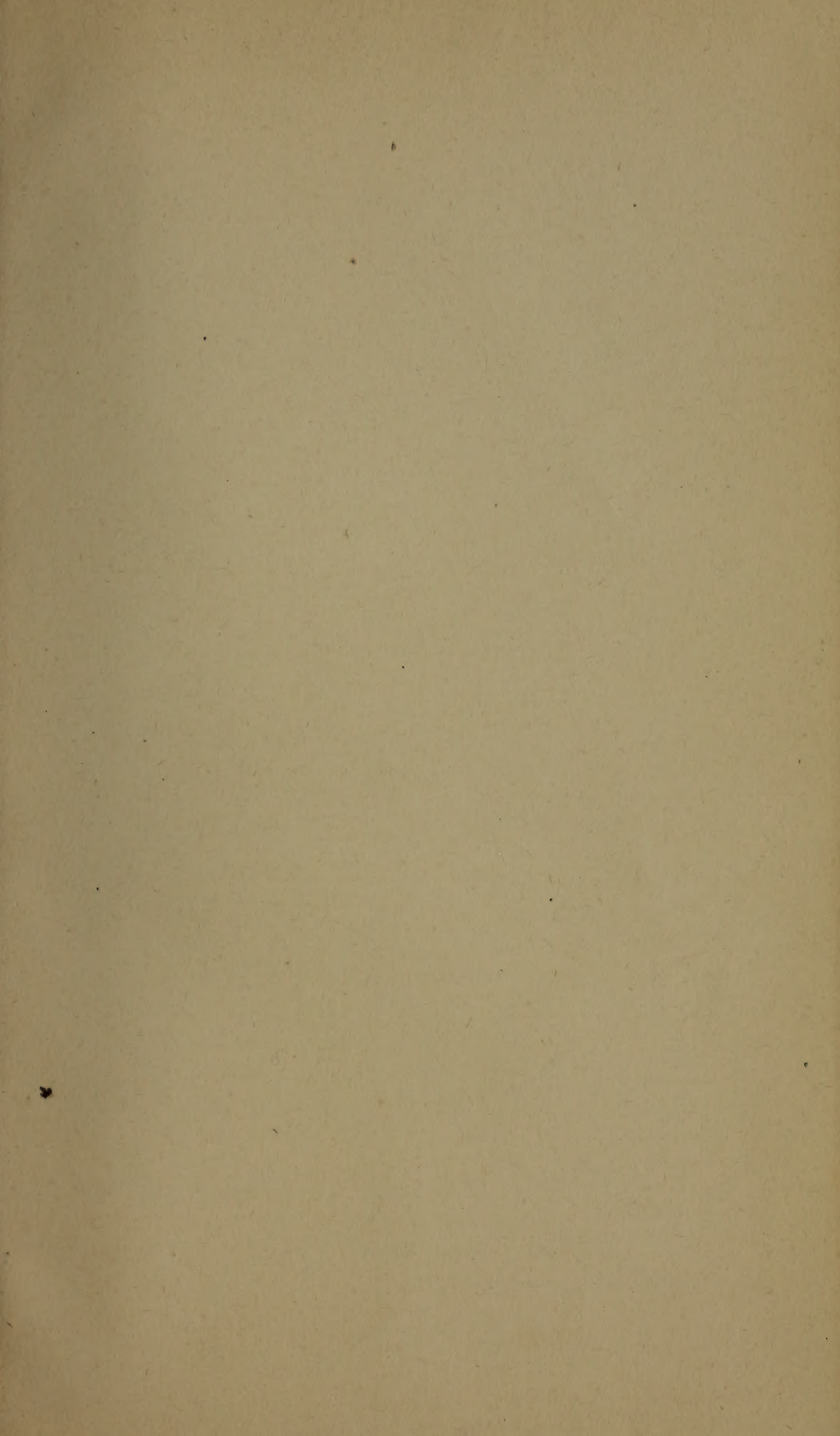
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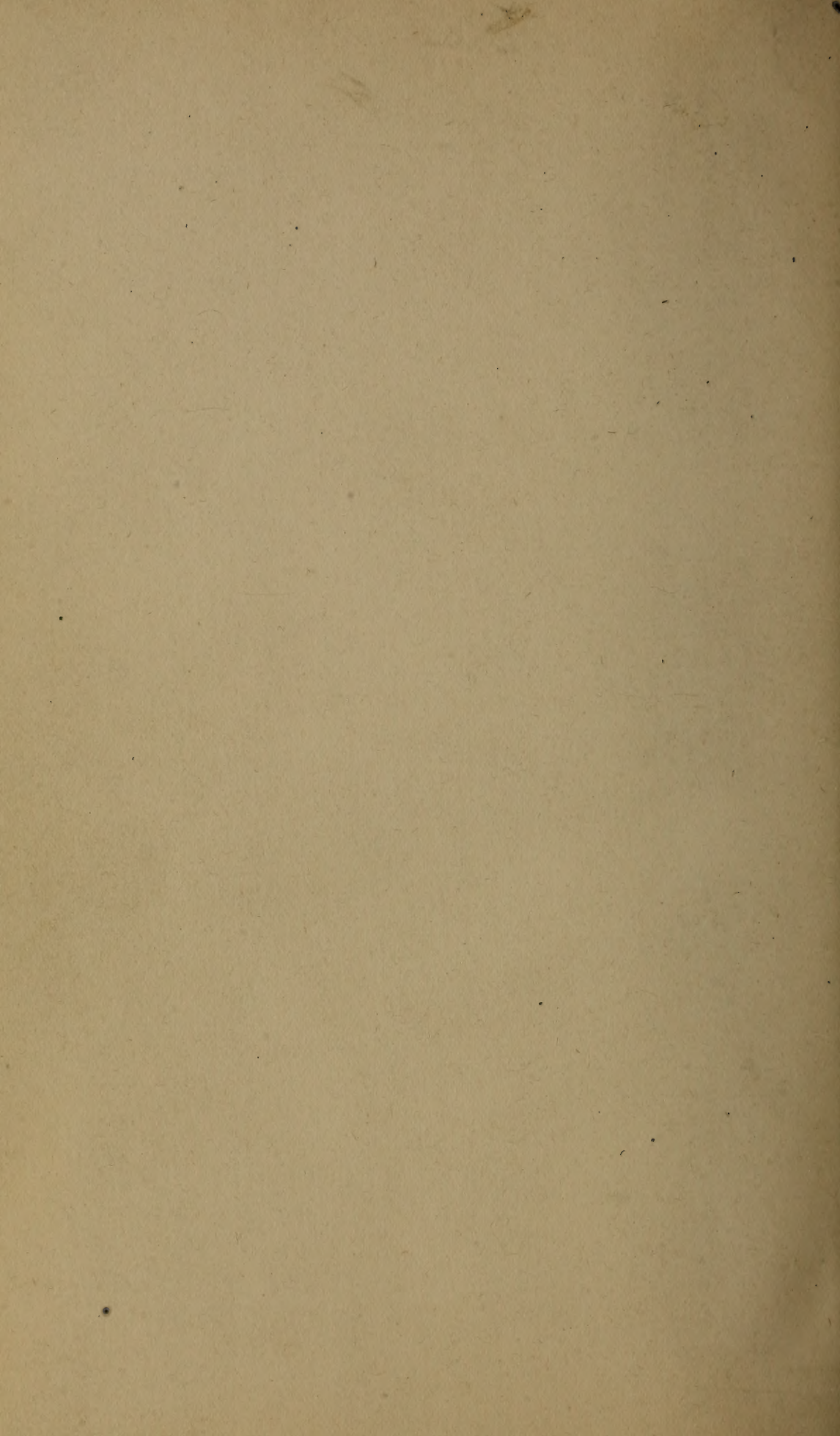
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